

DÁIL ÉIREANN

AN COMHCHOISTE UM CHUMARSÁID, ACMHAINNÍ NÁDÚRTHA AGUS TALMHAÍOCHT

JOINT COMMITTEE ON COMMUNICATIONS, NATURAL RESOURCES AND AGRICULTURE

Dé Máirt, 21 Feabhra 2012

Tuesday, 21 February 2012

The Joint Committee met at 12.00 noon.

MEMBERS PRESENT:

Deputy Tom Barry,	Senator Michael Comiskey,
Deputy Michael Colreavy,	Senator Mary Ann O'Brien,
Deputy Pat Deering,	Senator Pat O'Neill,
Deputy Martin Ferris,	Senator John Whelan.
Deputy Noel Harrington,	
Deputy Colm Keaveney,	
Deputy Mattie McGrath,	
Deputy Éamon Ó Cuív,	
Deputy John O'Mahony,	
Deputy Ann Phelan,	

In attendance: Deputies Ray Butler, Seán Conlan, Regina Doherty, Damien English, Charles Flanagan, Heather Humphreys, Shane McEntee, Caoimhghín Ó Caoláin and Peadar Tóibín, and Senator Thomas Byrne..

DEPYT ANDREW DOYLE IN THE CHAIR.

Meath-Tyrone Interconnector: Discussion

International Commission of Experts

Chairman: I remind members to turn off their mobile telephones completely. I understand Deputy Ó Cuív will be unavailable for part of the meeting but he will attend as soon as he is able to do so. Deputy Moynihan also sends his apologies.

The purpose of today's meeting is to discuss the Meath-Tyrone interconnector report and the review by the international expert commission. The Minister for Communications, Energy and Natural Resources appointed a international expert commission to review the case for and cost of undergrounding the Meath-Tyrone 400 kV power line. On publishing the report, the Minister forwarded a copy to the committee to facilitate a debate its contents.

On behalf of the committee, I express appreciation to Mr. Bo Normark and Mr. Odd-Håkon Hoelsaeter, members of the international expert commission, for travelling from abroad to meet us. I also acknowledge the presence of other witnesses in the Visitors Gallery, some of whom will be addressing the committee later today.

The purpose of today's meeting is to hear from the witnesses who have been invited to comment on the report. Each witness group should focus on the report and ample opportunity will be given for discussions. If witnesses, having regard to the contributions of other witnesses, wish to make further points subsequent to the conclusion of their engagement with the committee, the Official Report of which will be available on the Oireachtas website in the next day or two, they can do so by writing to the clerk to the committee with their additional points over the coming days. The joint committee will give its consideration to the points raised as part of its final deliberations on the matter.

We have a long day ahead of us and I will briefly outline the format for the meeting. Mr. Normark and Mr. Hoelsaeter will begin by briefing the committee on the report, followed by a question and answer session with members. The two gentlemen will then withdraw from the meeting and I will invite representatives from ESB Networks and EirGrid to make their presentations and comments. We will break for lunch after that session. In the first session after we return from lunch representatives from the North East Pylon Pressure campaign will make their presentation on the report, followed by a question and answer session with members. I will then invite representatives from the Monaghan Anti-Pylon Committee and the Ratheniska action group to make their presentations and comments on the report. A question and answer session will follow.

The international experts have indicated they will withdraw after they make their contributions and will follow the contributions from ESB Network and EirGrid in a room which has been reserved for them. They must follow a schedule and will be leaving this evening but if they wish to respond to a comment of serious note they will return briefly to address the issues arising before we break. Is that agreed? Agreed.

I welcome Mr. Normark and Mr. Hoelsaeter and thank them for attending the meeting. Be-

fore I invite them to make their opening presentation, I advise them that witnesses are protected by absolute privilege in respect of the evidence they are to give this committee. However, if they are directed by the committee to cease giving evidence in relation to a particular matter and they continue to do so, they are entitled thereafter only to a qualified privilege in respect of their evidence. They are directed that only evidence connected with the subject matter of these proceedings is to be given and they are asked to respect the parliamentary practice to the effect that, where possible, they should not criticise or make charges against any persons or entity by name or in such a way as to make him, her or it identifiable. Members are reminded of a long-standing parliamentary practice to the effect that Members should not comment on, criticise or make charges against a person outside the House, or any official by name in such a way as to make him or her identifiable.

Mr. Bo Normark: I thank the Chairman for the opportunity to address the committee. I will briefly introduce the study and then respond to members' questions. On 5 July 2011 the Minister for Communications, Energy and Natural Resources announced that the Cabinet had agreed to his proposal to establish an international commission of experts to review and report within six months on the cost and case for undergrounding all or part of the Meath-Tyrone 400 kV power link. The commission members contacted by the Department agreed to serve on the commission. The three members of the commission, of whom Mr. Odd-Håkon Hoelsaeter and I are two, have extensive professional backgrounds in the electrical supply industry, transmission system operations and academic study of power systems.

The task we were given was to review the expert literature available in Ireland and internationally on the undergrounding of high voltage power lines, consider the route proposed by Eir-Grid, examine the case for and cost of undergrounding all or part of the Meath-Tyrone line and consult EirGrid, the North East Pylon Pressure committee, the County Monaghan Anti-Pylon Committee and any other bodies or organisations as we saw fit. However, it was spelled out clearly to us that the permission for the power line was not subject to review. The commission has not dealt with issues related to EMF or the potential impact of the line on property values or landscape devaluation as none of its members possesses the necessary knowledge to comment on these issues. Several studies have already been carried out on the project by persons appointed by organisations representing various aspects and options. The commission has studied these reports carefully and incorporated available elements in our own report where we felt it appropriate to do so.

Furthermore, we have included a detail examination of recent and ongoing projects in Europe. This approach was deemed to be particularly relevant given the significant changes in technology, supplier opportunities and costs that have occurred in recent years. We expended considerable efforts on collecting data from five reference projects, all of which were relevant to the Meath-Tyrone project. These reference projects have ended up with differing choices of technology, which confirms there is no single correct solution. Each project must be judged on its individual merits and hybrid solutions combining different technologies have been applied in almost all cases, ranging from advanced overhead solutions, through partial undergrounding to use full underground cables.

A specific technical solution must be derived from local conditions. The commission does not give a specific recommendation but general lines of thought can be derived from the examples studied and an examination of the state-of-the-art technologies. We believe that overhead lines can be rendered more acceptable by using new tower designs, conductor types and other measures to reduce visual impact and, in some cases, minimise EMF. Short distances may also

be covered by using underground AC cables. Given the distance covered by the Meath-Tyrone project, the commission recommends against a fully underground AC cable solution. If the option is to underground the connection along the whole or main part of the route with today's technology, the best solution is a VSC HVDC solution combined with XLPE cable. The best cable route is most likely following existing infrastructure such as large freeways or railroads, or through farmland as the width of trajectory is far less than is needed for AC cables. In difficult terrain for undergrounding, DC overhead lines might be used.

For cost estimations, values found in real projects under execution are the most reliable source, although high market activity and large fluctuation of key cost parameters such as metal prices have a major influence and they can be different given a different technical solution. The commission finally wants to stress that an overhead line still offers a significantly lower investment cost than any underground alternative.

Chairman: Does Mr. Hoelsaeter wish to add anything?

Mr. Odd-Håkon Hoelsaeter: Mr. Normark has given our initial statement.

Deputy Martin Ferris: I thank the witnesses for their report. The TransGrid report of 2009 commissioned by EirGrid was published prior to the submission of the planning application in 2009. It stated that the VSC HVDC technology was technically feasible and had improved dynamic performance compared with the AC alternative. It continued to state that in their presentation to An Bord Pleanála at the oral hearing regarding technical alternatives they dismissed the HVAC underground option because it was not suitable for the Irish transmission system. The following reasons were given: it would be too complex and costly; electricity losses are higher with DC than AC; and the risk for non-standard control system was deemed to be unacceptably high to security of supply. Given that reasoning, how valid is EirGrid's previous assessment of the use of HVDC with regard to today's state-of-the-art and emerging HVCB technology? It seems to be contradicting the report and using what I would argue are reasons not contained in the initial report and which differ from what Mr. Normark has said this morning.

Are the commission members satisfied that the technical difficulties and barriers mentioned by EirGrid can be totally overcome with regard to the undergrounding of the Meath to Tyrone line? Their report recommends undergrounding in certain areas with other areas going overground. I ask the witnesses to elaborate on the distances involved and the areas in which they believe this is feasible. What is the cost differential between underground versus overground? Some organisations claim it is eight, nine or ten times more expensive and others state it is only two or three times more expensive.

Mr. Bo Normark: Deputy Ferris has asked many questions and I will try to remember them. The report gives an assessment of the potential cost of undergrounding the Meath to Tyrone line based on cost data we have collected from ongoing projects in Europe. We suggest that a full underground solution would be of the order of magnitude of three times more costly. However, we have also spelled out that this is based on favourable installation conditions, which is a very important remark. The reference project found quite low cost installation solutions following main roads and farmland. With that comment I would say that we have come to a cost factor of roughly three.

We have also said that overhead lines could be used for part of the length. That has nothing to do with the length. If we assume that one might reach an area that is particularly difficult for undergrounding, one could select to go overhead for a limited distance. For this DC solu-

tion we would see underground as the main option and going overhead would be the exception. Whereas for AC it is completely the other way around - overhead would be the main option and only in the case where there are specific reasons would one go underground for short distances.

I ask Mr. Hoelsaeter to comment on whether this is feasible.

Mr. Odd-Håkon Hoelsaeter: I will first deal with the cost question. The Deputy asked how long it would be feasible for undergrounding and so on. Obviously, with DC it can be for as long as one needs it. For example, the DC interconnector between Norway and The Netherlands is close to 600 km in length. The North-South interconnector here in Ireland will be 145 km which means that one can even out the converter costs on all of these kilometres. It also makes the cost leverage between AC and DC more favourable. Over a shorter distance there will be a higher price difference with DC. In our opinion it is possible to go by DC up to the North. It is a very small system in Northern Ireland. Still in our review it is possible to go with a DC line also in parallel with an existing AC line. That is done elsewhere in the world with success. We have also seen some examples of that with VSC HVDC technology, which we are discussing here. It is also possible to have a so-called “black start” or having a more or less single source feeding into an area if necessary. That means that with this technology it should be possible to serve all Northern Ireland, in those situations where that is needed, by this HVDC line.

Chairman: As no other members of the committee are offering, I call Senator Byrne.

Senator Thomas Byrne: I reiterate the Chairman’s comments about Deputy Ó Cuív, who will be here for a later part of the meeting, but is at our party’s frontbench meeting at the moment.

I thank the members of the commission for coming here today. I also thank them for their work. As someone who met them in the course of their work, I was very impressed by their openness and that they wanted to meet us and the other stakeholders in the area. In so far as they could, they have produced a very readable report which the public will be able to understand to some extent even though it might be difficult. It is much more readable than some of the previous reports. It must be acknowledged that there have been at least five reports in this area in recent years in addition to the documentation EirGrid supplied as part of the planning application. A lot of work has gone on.

I have a fairly simple question to which I probably know the answer. Is it fair to say that the technology has changed substantially in recent years and that it continues to change? The witnesses might not answer this question - I know it is outside their terms of reference. If they had to make the decision what would they do? EirGrid carried out a preliminary re-evaluation report for the planning process generally in May 2011, a fair reading of which was to conclude that it completely ruled out high-voltage direct transmission, HVDC, technology as an option. What is the view of the commission on that? I am unsure whether the commission has given much consideration to the report. Will they provide a comment? What the commission has said is clear and I am unsure whether it warrants too much questioning.

Mr. Bo Normark: We will not make a recommendation. It is fair to say that while we have discussed the significant changes in technology in recent years there has also been a significant change in acceptance of more advanced voltage sourced converter, VSC, direct transmission, DC, technology. There are now ten projects under execution which, historically, is a high number. Naturally, from an operational standpoint we recognise that this is more complex and

it must be dealt with and one must learn to use the new systems. I offer an example. I should quote the report rather than Mr. Hoelsaeter because of his previous assignment at Statnett. Statnett, the grid company in Sweden, carefully examined connecting Sweden to Norway. The conclusion, which we have spelt out in the report, was that it would be possible to construct the south-west link with alternating current, AC, technology. When conception and solution was decided in 2009 the cost of the VSC solution was estimated to be 25% higher than the AC solution. The reason there was such a small difference was special because only one converter is paid for in Norway. From an operational point of view, the HVDC solution offers benefits in terms of possibilities to control active and reactive power, and it allows for control of power and voltage. This gives more possibilities to support the connected AC grid. A HVDC solution is judged to offer better solution for market support. This is valid both for expected capacity for trading and potential exchange for system balancing and servicing. A downside with the choice of VSC technology is that it is less mature and more complex and this can lead to increased operational risk. Based on an overall assessment of the two alternatives, Statnett decided on a HVDC solution over an AC solution. This is a comprehensive and balanced view on the situation. There is no one right answer because one can have different angles to it. Certainly there is movement towards higher acceptance of the technology.

Mr. Odd-Håkon Hoelsaeter: I fully agree that it is more complex. There are always some pros and cons when one is discussing the various types of technology. In the case of the Norwegian example that Mr. Normark mentioned, my former company opted for a HVDC solution, but that was after I left my position as chief executive.

Chairman: Will you clarify what is meant by “more acceptable”. Was it more acceptable to the industry, to the public or more acceptable simply because it is not as cost-prohibitive as it had been.

Mr. Bo Normark: I think it is less cost-prohibitive than in the past because the technology has been scaled up and there are economies of scale. Also, the technical performance has improved. There is an increasing acceptance by utility companies to incorporate these systems. One must learn and this is a new element in transmission system planning.

Deputy Michael Colreavy: The delegation referred to increased operational risk. Is this a risk to continuity of supply or risk to operatives. What operational risk is the delegation referring to?

Mr. Odd-Håkon Hoelsaeter: It is basically a risk that one must involve more technically complex layers such as controllers. One must control the converters in a different way. More complex technical installations are necessary and by this fact alone one increases the risk.

Deputy Michael Colreavy: The risk of what?

Mr. Odd-Håkon Hoelsaeter: The risk of failure of the system. However, it is always a balancing act. Sometimes one should accept increasing risk because there are other benefits which are higher or more valuable than the potential downside associated with these risks.

Deputy Heather Humphreys: I thank the delegation for the presentation. Page 28 of the report states that the HVDC VSC option is viable for the Meath to Tyrone connection. Can the delegation explain further what they mean by “viable”? Does this mean it is capable of working successfully?

Mr. Odd-Håkon Hoelsaeter: Yes.

Deputy Heather Humphreys: Does the commission believe the cost issue will become less of an issue in future as underground technology advances?

Mr. Odd-Håkon Hoelsaeter: It is difficult to foresee exactly what will happen in future but there has been a tendency in recent years such that converter and cable costs have reduced. I agree with the gentleman who suggested that years ago it was eight to ten times more expensive to go by cabling rather than overhead lines. At that time VSC technology was not available. However, the tendency or direction is that the price gap has been reducing all the time. In easy terrain - I emphasise this applies to easy terrain - as far as we can establish, it is approximately three times more expensive to use HVDC VSC technology for long power lines. One can then even out the converter costs on a long distance. I do not believe this tendency will continue at the same speed but at least we can hope that in future we will be able to construct with cheaper cable and so on. In the long run, it will be cheaper to go by overhead lines rather than cables. I do not believe the same costs will arise anytime. There will be some price differences.

Mr. Bo Normark: Since we completed the report there has been some awarding of contracts in this area. These seem to confirm the numbers we have seen in other projects. Perhaps they are somewhat lower but they are of the same order of magnitude as we have used in the report.

Deputy Damien English: I welcome the commission and it was a pleasure to deal with them on this matter. We had the chance to question several issues beforehand and I have no wish to go back over everything but I am keen to tease out some issues.

I will work back from the commission's presentation. Reference was made to reliability and the risk of failure. We are led to believe that this would be a major disaster. I get the impression from the commission that risk of failure is something that can be addressed or fixed afterwards. Is this the case? Let us suppose a decision was made to go underground. We have been told there are major concerns about joining together the systems of the South and North. I do not buy into this but that is what we have been told. Let us suppose it is built and a reliability issue arises. I presume it would be adjustable or fixable and that it is simply a case of thinking about it some more. Is there a larger issue? What is the major concern?

Mr. Odd-Håkon Hoelsaeter: The main concern in the case of most failure is in the converter areas. Such failure will be reasonably easy to address. We could fix it in a few hours or a day or two. It would take more or less the same time as with an AC situation.

The other more complex failure problem would be if there was failure of the cable. That takes more time. If the cable is underground, it would probably take a week or two or something like that. That is our experience. On the other hand, it is very rare to have a failure of the cable itself, unless somebody digging causes some external impact to the cable. These are just the different aspects of talking about failure in DC insulation compared to AC insulation. In my view, DC interconnectors are just as reliable as AC interconnectors.

Mr. Bo Normark: I would like to point out also that the base alternatives we have proposed here incorporate double DC circuits, two parallel circuits that can run independently. I do not wish to confuse the Deputy further by talking about system failure that can be more problematic, but there are also system conditions that one can mitigate with DC cable that one cannot do with AC cable. That is another side of the issue.

Deputy Damien English: I have four or five more questions and while I do not wish to

hog this meeting, I would like to go through them. What has been said clarifies that when we are talking about reliability, we are talking about temporary failure that is fixable quickly, not permanent and unfixable failure although we have been given that impression.

The expert commission report talks about the losses relating to the two alternatives. I am aware the report mentioned five, but I will stick to the two, AC and DC. There has been great improvement with regard to these, but will the witnesses elaborate a little more on the losses? They have spoken about a possible 60-year lifetime of a project such as this and I welcome that because I have always believed we should look at 60, 80 or 100 years for these projects. However, we were led to believe previously that 40 years was the maximum we should consider. What have the witnesses to say on that? With regard to the converter costs and converter stations, we have been advised that one is better to have AC in the north east so that one can tap in and out of it as much as one likes. I cannot see why it is necessary to have so many converter stations. Is it acceptable to have one at each end of the line if necessary and to use the existing network to distribute our electricity or do we need to allow for more converter stations along the route? They add difficulty and raise costs and I am not convinced of the need for them.

The witnesses have been very generous in saying there have been great changes in the past couple of years that lead to these new possibilities. I believe the changes had already taken place before we started this project. While that is not the expert commission's problem, I believe the evidence was there but was bypassed, overlooked and not given a fair assessment. I am sure it is being assessed fairly now. I know the expert commission cannot pick one project or option, but is it correct to say that if tenders were sought, contractors would or could tender for all of these alternatives or that they would be willing to tender for whichever option we select?

My last question relates to the supply of cable. Is it fair to say that there is no shortage of cable and that if we decide to go this route, we will not have to wait years for the cable, as we were led to believe in the past? Is it correct that it is possible and we can get the cable on the market? I have some other questions, but I can come back to them at the end.

Mr. Bo Normark: I hope I can remember all of Deputy English's questions. I will deal with the loss issue first. The most significant technological change in recent years is that losses have gone down in converters. However, the details for losses for both overhead alternatives and for the DC comes with the final designs. Therefore, we have made a ball park estimation. We estimate that for low and medium load levels, the AC would have low losses, whereas the DC would have lower losses for very high loads or power. It comes back then to making an evaluation and to what the utilisation would be. We would and could not have an opinion on that. Therefore, it is a matter of the expected utilisation and the cost for power.

The Deputy also asked about tapping in and out. Based on the re-evaluation of the project in 2009 by EirGrid, there was no intermediate sub station. If there was to be a need for such an intermediate sub station in the future, that would add further cost and we have indicated the type of cost that would be involved. Therefore, tapping into and out of the system was not considered in our report. However, it is technically possible.

On supply of cable, I can only note that capacity or cable production is increasing rapidly due to the rapid change in markets. To a large extent, it is the same factories that are producing land cable and sea cable, so the more sea cable that is ordered, the greater the pressure on the capacity to produce land cable. The Deputy may have heard the announcement last week that a cable was to be laid from Scotland to England, a distance of 420 km by two, so 840 km of cable.

We cannot give any information on the availability of cable. One must go to manufacturers to find out the how long one must wait for cable.

Mr. Odd-Håkon Hoelsaeter: I agree. In the past, oil impregnated cable was used for sub-sea cable and oil cables with insulation were used for land cable. That was the normal practice. Today, plastic insulated cables are normally installed, even for high voltage DC. There has been some development of cable technology in that direction. These plastic insulated cables are cheaper to produce and provide greater capacity. Therefore, the potential delay when ordering a cable today is much less than a few years ago.

Deputy Damien English: What is the lifetime of these cables? We have oil cables that are 60 years old. Could these new cables last longer than 60 years or how long will they last?

Mr. Odd-Håkon Hoelsaeter: Sixty years for a cable is a long life. The normal standard when one is looking for cable is to look for cable that will last at least 40 years. It should last that length without any significant problem.

Chairman: There was also a question with regard to tenders. Could a tender be submitted for the different options?

Deputy Damien English: Could someone bid on any of the options we pick? Are the witnesses confident they would bid on any of the options, whichever we select?

Mr. Odd-Håkon Hoelsaeter: Yes.

Deputy Seán Conlan: I welcome the representatives from the expert commission. My first questions relates to the report, which includes the cost of the line and the converter station in Northern Ireland. Why was this included when the terms of reference only referred to the line in the Republic? I understand from examination of the report that if one looks at the section of the line in the Republic only, the overhead option would cost €118 million and the most expensive underground option would cost €295 million. The least expensive underground option would cost €173 million. The difference in terms of the gold-plated underground option and the overhead option may be €177 million, but in terms of the least expensive underground option, it is only €55 million. Will the witnesses comment on that?

My second question relates to the new technology that has been mentioned for the overhead option. The report refers to modern pylons and new low sag conductors. This technology is expensive. Has this extra cost been included in the commission's costings for the overhead options? If it has not been, why not, given that the latest technology has been included in the costing of the underground option? I understand that the report mentions that power flow devices might be needed for the overhead option. Is that correct? If so, why have those devices not been costed?

Chairman: Does the Deputy have any more questions?

Deputy Seán Conlan: Yes.

Chairman: We will get the questions and then we will get the answers.

Deputy Seán Conlan: My last question relates to the roll-out of the grid across Europe. I believe it is experiencing massive delays. There is a great deal of community resistance to high-power voltage lines across the EU. I understand that very few projects on greenfield sites, like the Meath-Tyrone project, have been built in the last ten years across Europe. Perhaps I am

incorrect in that regard. I refer to the construction of complete overhead lines. Do the delegates share my understanding that there is a great deal of community resistance to these projects?

Chairman: Four questions have been asked.

Mr. Bo Normark: I will begin by answering the question that was asked about costs. We should make it clear that the gold-plated alternative that is mentioned in the report is the only alternative that is fully compatible in capacity with the overhead line option. We have indicated that a project with a smaller capacity can be built more cheaply. If one wants the same capacity, one has to build a full 1400 MW system. We looked at the full project, covering the whole distance from Meath to Tyrone, in our assessment. We did not look at any other option. It is true that there have been significant delays in the construction of many other power line projects across Europe. It is also true to say that there has been a significant acceleration in the last couple of years. More overhead line projects have been commenced and built. Overall, there has been a major increase in the construction of transmission systems. The overview report suggests that approximately one third of what is built today is DC and two thirds is AC. That proportion is roughly correct.

Mr. Odd-Håkon Hoelsaeter: We were asked whether the design tower element or any other element - the conductor, for example - was included in the costings of the overhead line. No such elements were included.

Deputy Seán Conlan: Okay.

Mr. Odd-Håkon Hoelsaeter: If a decision is made to proceed with a different design of the overhead line, it will probably increase the cost somewhat. We have not calculated how much it would increase by in such circumstances. If it is decided to use design towers and lighter conductors, that will add higher costs to the overhead line. That could be an interesting extra cost if it is decided to proceed with an overhead line while reducing the visual impact.

Deputy Seán Conlan: I would like to return to my original question. Why was the cost of the converter station in Northern Ireland included in a report that was supposed to deal with the section of the line in the Republic of Ireland? I believe the cost of the converter station is €155 million, which is a significant amount of money.

Mr. Bo Normark: One cannot build a DC system with a converter at just one end. If one does not put a converter at the Northern end, one will have to put it at the Border, so the cost will be there anyway.

Deputy Seán Conlan: If it is an underground solution, the Northern Ireland Government will be responsible for the cost of the Northern Ireland converter station.

Chairman: In fairness, the cost is the cost. We should be honest about that part of it.

Deputy Michael Colreavy: I ask the witnesses to forgive me if my questions seem naive. Is it possible for cables to occupy multi-service ducts? Could other utilities occupy the ducts that are used for these cables? Are the witnesses aware of roadside ducts being used for multi-utility cables in any location?

Mr. Odd-Håkon Hoelsaeter: It is possible to put more than one cable in a trench. The different owners of these installations are not normally in favour of that. It is more often done in cities with cables of a lower voltage. For example, electricity and telecommunications cables

can share the same trench as pipes for hot water and district heating. That is normal in cities. It is less normal in the open landscape between cities.

Deputy Michael Colreavy: The report is very good on the economic and technical options that exist. It is less easy to measure social impact. Is there any authoritative work anywhere which looks at things like the desirability of property in an area where there is an overground line of this nature? Has the resale value of land been examined? Has consideration been given to the impact, if any, on agricultural output? Are the witnesses aware of any authoritative research that would give us some information on the social aspects of this matter, rather than the purely economic and technical aspects of it?

Mr. Odd-Håkon Hoelsaeter: We have chosen not to comment on those aspects of the matter at all. We do not have the proper knowledge of the situation to give a decent answer. We are not willing to comment on them.

Chairman: To be fair to the gentlemen, they outlined the task that was given to them at the beginning. They said specifically that they would not discuss the impact of the line on property values or landscape devaluation. None of the members of the commission has the appropriate knowledge in that field. The Deputy asked whether they are aware of any other studies that may have delved into that area.

Mr. Odd-Håkon Hoelsaeter: We are talking about the EMF. We have seen some studies on a national level in different countries. I am not able to refer to any international studies.

Chairman: Fair enough.

Deputy Shane McEntee: The Meath-Tyrone project is the first part of a larger ongoing project right around the country. I want to refer to the prices that are being quoted. Everything will come down to money. Most things come down to money, at the end of the day. The 3:1 price is based on a 400 kV line carrying the highest possible amount of power, 1400 MW. Do we need that for the programme we have in place? If its capacity were reduced by half, how much would the cost of putting it underground be reduced by? If we were to provide for 700 MW instead of 1400 MW, would that 700 MW be enough to justify the project we are undertaking? We have already built an interconnector between Wales and Ireland. That was done and dusted while we continued to talk about this project. Do we need 1400 MW? Do we need a state-of-the-art line to carry this amount of power? Would we get away with 700 MW? If so, how much would the cost of DC underground be reduced by?

Mr. Bo Normark: We cannot comment on whether a smaller capacity would be sufficient because we do not have a background to comment on that. We have given the table indicating what the single circuit system would cost. Our table shows it would cost approximately 1.7 times more. It could come back to three for two. I should mention also that if one goes to one circuit, there are two effects. One would get less capacity and one would also lose this redundancy one has with the two circuit solution.

Mr. Odd-Håkon Hoelsaeter: If one wanted to do a closer study of that, one would have to do a study of the whole system and make a conclusion on that basis. We have not done that, so we are not able to give a straight answer. It is possible, of course, to do so and to see whether it is possible but it also has that effect which Mr. Bo Normark pointed out. One would not have the redundancy in the HVDC solution. One would also slightly reduce security of supply for that power line.

Deputy Shane McEntee: From 1.7 to three times the cost is quite high. Are we wrong not to look at the national issue?

Mr. Odd-Håkon Hoelsaeter: I do not think we should answer that. It is-----

Deputy Shane McEntee: It is relevant. This is the start of a very ambitious plan which everyone in this House and in this country is behind.

Mr. Odd-Håkon Hoelsaeter: That kind of decision must be up to the Irish community.

Mr. Bo Normark: I would make one comment on cost. We realise there will be a need for more 400 kV lines in Ireland. One consequence of using this DC alternative is that if one expands the system, it could be possible to expand it by building another cable and just one additional terminal. This is the case, for instance, in this product in Sweden. They started by building two converter sites and a third in Norway. In that context, in relative terms, expansion is more favourable than starting.

Chairman: If a decision is taken to use HVDC, initially, one must have two converters. One does not have a choice in that-----

Mr. Bo Normark: Yes.

Chairman: -----but from then on, one can tee off. Depending on the capacity load or what is required, the economics of it improve on the basis that every other destination only needs a further terminal, north or south of one and two. Is that correct?

Mr. Bo Normark: Yes. That is correct.

Deputy Damien English: It is greatly reduced if one wants to go to the west of the country.

Chairman: North west, north east, south and south west. Is it half the cost of the converter? In effect, the converter cost is halved.

Mr. Bo Normark: Yes.

Chairman: Would the two primary converter stations have the capacity? Is that an issue? Would they have the capacity to extend either way? Would that be a factor when considering the ones one would build?

Mr. Odd-Håkon Hoelsaeter: It is difficult answer that directly because it depends on what kind of capacity one wants in these different directions and what kind of capacity is initially built.

Chairman: Would they be compatible with the existing grid system, which is AC in the main?

Mr. Odd-Håkon Hoelsaeter: The AC system will always be the most flexible part of it but, to a greater degree, as in other countries, a DC system could be included in an AC system which would make it more flexible. That is something into which one must look at each step, that is, to see what is the best solution for the next step. To draw some clear conclusion on that today is very difficult.

Mr. Bo Normark: If one expands the system, the voltage needs to be the same but the rating of additional converter can be different. One does not need the same size. The converter size

determines how much power one can feed in and take out.

Chairman: When the system is fed down, it will be AC. It will be a lower voltage but AC will feed the greater system. If DC was to be used, it would be the main artery rather than anything else.

Deputy Damien English: Am I right that no greenfield sites have gone down the route of AC overheads?

Mr. Bo Normark: That is not correct. One of the cases in the report is in Norway and it is totally greenfield and 100% AC overhead. The report also mentions this product in Holland which is high grid with AC and some small portions of it are underground AC cable.

Deputy Damien English: The trend in the past two to three years is towards much more DC. Is that correct?

Mr. Odd-Håkon Hoelsaeter: It is more DC compared to what one had in the past but one should not underestimate the fact that AC and greenfield installations will be built in the future. It depends on the location, the costs, the terrain and so on. For example, the power line in Norway, which Mr. Bo Normark mentioned, is in mountain terrain where cabling would be extremely expensive. They also looked carefully into the different options, such as HVDC, VSC and so on. They concluded with an AC overhead line in pretty nice mountain terrain.

Deputy Damien English: It is very flat here.

Deputy Seán Conlan: The Deutsche Energie grid II study looked at the cost of new underground HVDC grid compared to the traditional AC grid and concluded that the cost was twice as high. That concurs with the witnesses view of 1.7:3. This increased the overall cost of domestic energy by 0.2 cent per kilowatt hour in Germany. In the most expensive case, it was by 0.5 cent per kilowatt hour. Do the witnesses concur with that view given their knowledge of European energy markets?

Mr. Bo Normark: The study to which the Deputy referred, the Dena study, is an overall study. We must recognise that Germany has a very extensive grid. In any context, whether underground or overhead, additional grid is very small compared to the existing grid. That is why the consequences of the tariff is limited because the added grid is very small compared the existing one.

Deputy Seán Conlan: The report mentions that a specific technical solution must be devised for local conditions. What specific local conditions do the witnesses believe are necessary to consider in this project?

Mr. Bo Normark: Local conditions include the kind of landscape one has. That is the most important local condition.

Mr. Odd-Håkon Hoelsaeter: If one has mountain terrain or forest terrain compared to open farmland, the costs involved are totally different.

Deputy Seán Conlan: Is there anything to prevent an underground solution being found to this North-South interconnector route given the specific conditions?

Mr. Odd-Håkon Hoelsaeter: First, they are seeing only half of the routes. On the other hand it would not be right of us to draw too many clear conclusions on what should be done in

the future. We have highlighted the approximate price difference with different technical solutions and also underlined the fact that the costs we have mentioned depend on an EC routing which means farm land, a shoulder on a main roadway or something similar to that.

With regard to what should be done on these specific projects, that is not up to us to say. Somebody else should make that conclusion.

Deputy Shane McEntee: It may be an observation but Mr. Normark said earlier that in some cases long lines of some 500 or 600 km were being put underground. As I stated, approximately 600 km of this high voltage line is to be put in around Ireland. In terms of cost would it be better for us to complete the entire project at the one time? Rather than doing it from, say, Batterstown to Tyrone would we be better off doing the entire 600 km at the one time rather than doing one stretch now and applying for applications in three years time? In terms of an overall plan would it be better to do it that way because as the witnesses said earlier it would cut down on the costs?

Mr. Bo Normark: There is another alternative in the report, that is, if a smaller capacity is built consideration could be given to installing a two cable system because if new trenches are opened up the additional cost is very high. Consideration could be given to adding convertors later.

Deputy Damien English: When we met the representatives originally on this report they were clear that the cost of delays should be assessed and that it should be a factor in the decision making process. Do they still hold that view because they mention in their report that many of the overhead projects throughout Europe have experienced considerable delays, similar to the delays here? I accept they said they cannot compute those costs but is it correct that they should be properly assessed and added to that?

Mr. Odd-Håkon Hoelsaeter: Throughout Europe there has been ongoing resistance against overhead lines, which has meant that the process of going with permits to build new overhead lines has been substantially delayed. That is more or less normal throughout Europe, regardless of the countries involved. It is something that has developed in the past ten years at least and is an element that should be taken into consideration here but we have not done anything in that regard.

Deputy Damien English: Yet we should. I thank Mr. Hoelsaeter.

Senator Mary Ann O'Brien: I have one question which might be slightly naive. What is the most cost effective solution in terms of underground, keeping in mind the words "flexible", "expand" and the phrase "build on for the future"? As the Minister said, it is clear we cannot afford the Rolls Royce but we want to be mindful of the future. I ask the same question in terms of over ground. Looking to the next six years, what would be the most cost effective solution keeping in mind the words "flexibility", "expansion" and "upgrade"?

Mr. Bo Normark: We have partly addressed that question already. We made it clear that AC underground for this kind of distance is not an option. That leaves DC and with DC the two choices to be made are capacity and redundancy. We cannot recommend anything in that regard. The same discussion has taken place in other countries which probably have the same problems to deal with in terms of where the new generation will be, how much it will cost and even if the generation will be decommissioned. That is more problematic than judging where the load will be.

Senator Mary Ann O'Brien: That is the reason the words “flexible”, “expansion” and “upgrade” will be important for our future generation.

Mr. Bo Normark: Yes, I understand.

Senator Mary Ann O'Brien: However, we must be cost effective also. I agree that the social aspect, which we are not supposed to talk about, is a huge consideration in terms of health, agriculture and valuations.

Mr. Odd-Håkon Hoelsaeter: Many different factors have to be taken into account before any direct decision can be taken. I agree with the Senator in terms of some of the elements she mentioned but what we outlined in our report is an overhead line after an HVDC VSC. Those are the two alternatives we have discussed directly. In our opinion there should be flexibility in that regard. It is a different kind of flexibility but they are comparable in our view. Other factors will affect the decision to choose one or the other.

Chairman: That concludes the discussion. I thank both gentlemen for attending to make their presentation and answering the questions put to them. Having gone through this discussion process they will appreciate the importance of having a one-to-one question session on the report. The commission was asked to review the case for and cost of undergrounding all or part of the line, and the witnesses took the default as the standard AC overhead cable. It boils down to an economic evaluation. The different evaluations that must be done were outlined by the members. There is a time line on this process to the extent that the Northern Ireland planning process gets under way in early March. In that regard, what the Republic is planning must be outlined to ensure its process can go ahead in terms of the provision it must make.

I propose to suspend the meeting for two minutes to allow our witnesses withdraw. They will watch the contributions from the EirGrid and ESB Networks representatives on the monitor in another room. I thank the witnesses. I have asked them to review the transcripts of the remainder of this afternoon’s proceedings in terms of the other groups who will appear before the committee and if there is any issue or question posed on which they would like to respond we will forward them to the witnesses for their consideration. Is that agreed?

Mr. Bo Normark: Yes.

Sitting suspended at 1.18 p.m. and resumed at 1.20 p.m.

EirGrid and ESB Networks

Chairman: We will resume with the witnesses from ESB Networks and EirGrid. I welcome Mr. Jerry O’Sullivan, managing director, Ms Marguerite Sayers, head of asset management, and Mr. Denis O’Leary, head of sustainability and network systems, from ESB Networks. The representatives from EirGrid are Mr. Dermot Byrne, chief executive, Mr. Andrew Cooke, director of grid development, and Mr. Tomás Mahony, transmission project manager.

By virtue of section 17(2)(l) of the Defamation Act 2009, witnesses are protected by absolute privilege in respect of the evidence you are to give this committee. If you are directed by the committee to cease giving evidence in relation to a particular matter and you continue to do so, you are entitled thereafter only to a qualified privilege in respect of your evidence. You are directed that only evidence connected with the subject matter of these proceedings is to be

given and you are asked to respect the parliamentary practice to the effect that, where possible, you should not criticise or make charges against any person or entity by name or in such a way as to make him, her or it identifiable.

Mr. Jerry O’Sullivan: I thank the Chairman and the committee for the opportunity to have an input to the meeting. I welcome the report from the expert commission and the opportunity to meet the commission during the preparation of the report. The electricity industry in Ireland is very different from what it was a couple of years ago. It is somewhat more complex. EirGrid and ESB are two separate, independent semi-State companies with very different roles and responsibilities under licence, with the ultimate aim of providing a safe, efficient electricity infrastructure to meet customer needs, Ireland’s needs and Ireland’s future needs. The electricity business is a long-term game. I was interested in the questions put to the expert group. From a regulatory point of view, the distribution system has an asset life of 45 years and the transmission system has an asset life of 50 years. That point came up in earlier questions.

With forbearance of the committee, we will briefly describe the electricity industry as it is and the specific roles of the ESB, ESB Networks, EirGrid and the Commission for Energy Regulation, CER, in the context of transmission and distribution networks. In an Irish context, we will discuss what transmission and distribution mean. I sent some slides yesterday but we do not have the facility to view them online. I will go through them and draw the attention of committee members to particular points.

I will also give the views of ESB Networks on the expert commission report before handing over to Mr. Dermot Byrne from EirGrid. The first slide relates to the electricity industry structure, which is very different and more complex than it was a couple of years ago. Many national and international companies generate power. Many windfarms do the same and they sell output to a single electricity market, called a pool. There are some 2.3 million customers in the Republic of Ireland and the market has been fully open to competition since 2005. Every customer has a choice of company from which to purchase electricity. There are many supply companies, who buy power from the pool and sell it to customers. The easiest way to think about the electricity infrastructure is to consider a toll road. The function of the electricity infrastructure is to safely and efficiently transfer power from generators to end users. It is heavily regulated by the regulator, the CER, and the regulator decides in five-year regulatory periods what will be invested in the electricity infrastructure, the standard of service required and the costs and returns allowed to the electricity companies. Ultimately, the regulator sets the price of electricity.

ESB Networks is a legally unbundled part of ESB and its role is to design, build, maintain and operate the distribution system, which we will explain later. Its role is also to build, fault-fix and maintain the transmission system to the specifications set by EirGrid. EirGrid is a separate semi-State company and its job is to carry out the long-term planning for the transmission system in Ireland, to specify the what, where and how, and to operate the system when it is built. It operates on an all-Ireland basis through its sister company, Systems Operator for Northern Ireland, SONI, the equivalent of EirGrid in Northern Ireland. Our role on the transmission side is to be a contractor, building whatever is decided by EirGrid to the specification set by EirGrid.

A question arose about voltages, which are defined slightly differently in every country. The basic principle is that the higher the voltage, the more efficient it is to transfer power over long distances. The highest voltage available in Ireland is 400 kV, or 400,000 volts, although there are higher voltages available in other countries. A television uses 230 volts so this is high-voltage compared to what is used in domestic settings. As we get closer to end customers, it is

stepped down to 220,000 volts and then to 110,000 volts and these three voltages make up the transmission system in Ireland. It is a small transmission system by international standards, with 6,300 km of overhead network and 140 km of underground cables through the centre of Dublin, Cork and Limerick.

From 110,000 volts to medium voltage and to what is used in the home represents the distribution system. There are large volumes on this network, with 140,000 km of overhead network, 230,000 transformers and 2.3 million metres to be managed by ESB Networks as part of its distribution system.

The transmission system is the topic for discussion today. There are 440 km of 400 kV and its purpose is to transfer power from Moneypoint, which was built on the Shannon Estuary to accommodate the largest ships in the world, to the population centres on the east coast. My presentation includes the statistics for the number of kilometres in the 220 kV network and the 110 kV network and its layout on the map of Ireland. As I mentioned, the system operator of the transmission system is EirGrid. It operates the power flows on a day-to-day basis and ESB Networks operates the distribution system.

The next slide shows where the stations are located. The only notable factor is that one of the stations in the 400 kV system is Woodland, which is the take-off point for the infrastructure being discussed today. It is useful to show the committee pictures of what the network looks like. There is a picture of an existing 400 kV line from Moneypoint. There is also a 220 kV line. The notable feature is that they are built on pylons or steel structures. The 110 kV, 38 kV, medium and low voltage supplies to homes are built on wood poles. There is one interconnector with the North, which is shown on the next slide. We have sketched the proposed infrastructure of the further 400 kV interconnector.

On the specific roles of EirGrid and ESB Networks in the context of the infrastructure, the role of the ESB is to fund the development. It is small in the European context but because it is a vertically integrated utility it owns assets it has an active part in generation, transmission, distribution and supply to customers. As we have a credit rating, a very strong international reputation - we work in 40 countries - and the ESB is seen as the third most advanced utility in the world, we are able to borrow money efficiently on the world bond markets. As the committee is aware, we do not depend on the Exchequer for any funding. The important point that needs to be made today is that ESB borrows the funds necessary to invest in the electricity infrastructure in Ireland, including the infrastructure we are discussing.

As I mentioned earlier, we build the network and will build this infrastructure to the specifications set by EirGrid. We will maintain the line, cable or whatever else is built to the standard it sets. EirGrid is the system operator in Ireland and has sole responsibility for the planning and operation, when constructed, of the transmission system. It sets the technical standards. It obtains the planning permission and consent necessary to build this infrastructure, including the line we are discussing. It will deal with any customers who want to connect directly to the transmission system. While ESB Networks will maintain and fault fix the infrastructure, it is to the standard and specification set by EirGrid.

We have an integrated delivery model in Ireland. Tendering and contracting were mentioned. In the presentation the committee can see that EirGrid sets the investment plan in terms of what is needed and obtains land consent. We do the same at distribution level, including the supply to homes. The ESB is in a unique position in that there is no demarcation in ESB Networks. While other utilities have a series of issues, the person who fixes the supply anywhere

in Ireland tonight will also be able to fix and build the transmission line.

We supplement our workforce with approximately 1,000 national and international contractors. When what needs to be built is decided upon, we develop a detailed design and decide on project management, procurement, funding and commissioning, using the combined force we have, plus contractors, which can build a distribution line today and transition line tomorrow. That is the delivery model which applies in Ireland. It is a shared process. The specification is set by EirGrid and the building is done by ESB Networks.

Against that background, I will outline our comments on the report of the expert commission. We agree that historically in Ireland and Europe distribution and transmission took place through rural lines which were built overhead. Overhead is the least cost feasible solution, and we concur with that view. The commission, having examined various options, said overhead and HVDC are technically feasible, with which we agree from a construction point of view, which is our role. The commission also said the HVDC solution is three times more expensive and would cost €333 million. From our experience of networks, we would concur with that finding.

Beyond that factual statement, I remind the committee that the ESB needs to borrow money on world markets for this infrastructure. They are quite challenging, which the committee knows. Any incremental cost of any infrastructure will increase the price of electricity for all customers. Our small system was referred to earlier. The €333 million cost has to be funded, as do all the other things that will happen over the next 50 years, and will cost customers in the order of 0.7%, including VAT.

We mentioned EirGrid's role. Our role as the funder and contractor is to build whatever solution is decided upon by it and other policymakers. The committee should think of us as a contractor. I hope the presentation picked up some of the themes of our industry and clarified the roles involved.

Chairman: I thank Mr. O'Sullivan. He has managed to make what is a complicated landscape very understandable, in terms of the structure and interface between the ESB and EirGrid, and transmission and distribution. I invite Mr. Byrne and Mr. Cooke to make their opening statements before we take questions from members.

Mr. Dermot Byrne: I thank the Chair for the opportunity to come before the committee. It is our first time to do so and we are delighted to be here. We welcome the publication of the report. We met Mr. Bo Normark, Mr. Odd-Håkon Hoelsaeter and Mr. Ronnie Belmans as they conducted their research and were happy to provide them with all the information, data and assistance required. Before I invite Mr. Cooke to talk about the detail of our response to the report, I will try to put some context on what we are doing because we face a much greater challenge than just one project.

I will pick up on Mr. O'Sullivan's presentation and discuss our role in the industry. As he said, our role is to operate Ireland's power system safely and securely. We do that on a 24-hour, seven-day a week basis from our national control centre. Some Deputies and Senators have visited it and saw how it operates. In doing that we also have to deliver a secure and reliable power supply to every county and region in the country. The security and reliability of the power supply is fundamental to industry, firms and households. For example, the Intel complex is the biggest load on the system and requires the highest quality and reliability of supply. If there is a blip in the system due to lightning or whatever, it is the first to notice it in its produc-

tion. Quality and reliability are critical.

Another element of our role is to develop the grid in a cost-effective manner to provide a platform for economic renewal, regional development and to harness Ireland's renewable resources. It is not just a matter of keeping the lights on today, we need to make sure that in 20 years' time when a switch is pressed a light comes on. Make no mistake about it, we are involved in a total transformation of the power system on the island of Ireland to achieve the policy goals of security, sustainability and affordability. We are developing the power system of the future by harnessing the tremendous renewable resources we have on the island of Ireland. Central to that is our GRID25 strategy. The backbone of the power system is the transmission grid. We need the grid to ensure reliability of supply to businesses such as Intel and to households and farms. We need the grid to take the power from where it is generated to the market, where it is needed. Our strategy involves GRID25. This represents an investment in the transmission system of €3.2 billion over approximately 15 to 20 years, and this is central to ensuring Ireland develops a power system that meets the country's future energy needs in a sustainable manner.

There are a couple of key issues that are particular to Ireland. First, we have an island utility. What this means in terms of power systems is that we have a relatively light system. We do not have one such as those in mainland Europe or Scandinavia. Second, we are harnessing renewable resources, mostly wind. Wind generation is very different from conventional gas-fired, oil-fired or coal-fired generation in that it is non-synchronous. "Non-synchronous" is a technical term that effectively means the weight of the rotating masses of the large power systems, such as those in Aghada or Moneypoint, does not exist. As we generate more power from wind, the heavier machinery of the conventional power plant will be displaced, resulting in a lighter system on what is already an island system. This poses particular challenges for operators such as ourselves when we think about the inertial coupling between the Southern and Northern Ireland systems. This is getting technical but these are the technical issues we must deal with when we speak of the development of the grid. This relates to technology choices that must be made in developing the grid.

I will hand over to Mr. Andrew Cooke, who will take us through the detail of the response that we want to make today to the committee.

Mr. Andrew Cooke: I will try to be brief. If possible, I will pick on one or two of the points made in the earlier discussion.

We very much welcome the completion of the report, as Mr. Byrne said. While we have a number of observations on it, we believe the conclusions, in the main, concur with EirGrid's position on the comparative benefits of the various transmission technologies available, and with the findings of a number of international studies by other transmission system operators and experts.

I will refer to extracts from the report to summarise those points that are generally common between the commission's findings, our findings and our understanding of international norms. The first key finding in the slide entitled "Key expert commission findings" is that overhead line is still by far the least costly technology option available for on-land transmission development. It is by far the most widely used for on-land transmission requirements. Some of the figures referred to earlier suggest approximately one third of planned development is DC based. That involves almost entirely submarine DC interconnection where overhead line is not possible. By way of example, in the ten-year period to 2009 in Europe, over 10,000 km of new 400 kV

overhead lines were commissioned. As the expert commission noted, it is planned that a further 23,000 km of 400 kV overhead lines will be commissioned in the next ten years. It is expected that approximately 98% of the on-land 400 kV development will be by way of overhead line.

The second key finding is that an AC underground design is not realistic for the length of the Meath-Tyrone 400 kV project. We fully concur with this. It is supported by several other international reports considering projects and the maximum length that can be installed with AC underground lines. It is significantly less than the required distance for the Meath-Tyrone project. That is not to say that AC undergrounding is not feasible over shorter distances. The expert commission's report references some overhead line projects which incorporate relatively small amounts of undergrounding, generally in congested, urban or especially sensitive environmental areas. We are aware of a number of such projects around Europe. Typically, they involve undergrounding of sections between 5 km and 10 km.

We are also aware of many projects in Europe that are based entirely on overhead lines. They do not involve any undergrounding. An example is the 220 km Beaulieu-Denny project, recently approved in Scotland. This involves a double-circuit 400 kV overhead line and it will involve no undergrounding.

The third point that the commission notes is that HVDC voltage-sourced conversion, VSC, technology is developing rapidly and has undergone significant change in recent years. There have been developments on overhead line technology. We agree in this regard. We are developing the east-west interconnector between Ireland and Wales at present. It employs the VSC technology to which the commission referred. When the project is completed later this year, it will be the largest VSC development in the world to date. We are, therefore, very familiar with HVDC technology and what state-of-the-art technology is. We fully intend to adopt HVDC where it is appropriate. We do not believe it is appropriate for the North-South project and I will explain why.

The commission noted that a disadvantage of the choice of VSC technology is that it is less mature than overhead line technology and will lead to operational risks. I will return to this at the end in the context of some of the questions and answers.

Let me refer to the areas in respect of which we differ or differ to a degree regarding the expert commission's conclusions. They fall into two main categories, the first of which is the suitability of HVDC technology for the project in question and, second, the extra cost of an HVDC solution by comparison with that of an overhead line solution.

Let me address briefly the technology challenges. We set these out in more detail in a briefing document, also supplied to the committee. I will only touch on the matter briefly because it is a quite complex area. In comparing European reference projects, including those referred to by the expert commission, it is important to consider some of the differences between the power system on the island of Ireland and neighbouring European systems. Europe is made up of a small number of generally very large synchronous power systems. There are about five on the entire Continent of Europe, each of which has strong conventional AC connections. They are built on AC technology. Even the system in Great Britain, which is probably about the smallest next to ours, is 12 times the size of ours. The mainland European system is vast by comparison. It is approximately 100 times the size of the Irish system.

The Irish system is much smaller than its European neighbours' systems. Owing to its size and low density, we have a relatively low density of demand. Therefore, we have a thin system

in Ireland. It is electrically much lighter and inherently less robust by comparison with those of other European countries. The considerable size, sheer physical momentum and electrical inertial weight of conventional generators turning together give the systems in mainland Europe, Scandinavia and elsewhere significant stability. If one is cycling a bicycle and meets a relatively small obstacle on the road, it can still have a significant effect and derail one. If one is driving a juggernaut, the same obstacle will have little or no impact. If there is a disturbance in one of the large systems in Europe, the huge momentum contributes to stability and to riding through that disturbance.

As Mr. Byrne mentioned, Ireland is at the leading edge in terms of developing renewable energy in the system. The combined system on the island of Ireland will have more wind farms installed and operated as a percentage of the overall energy requirement by 2020 than any other synchronous system of any scale in the world. We spoke about this before in terms of a unique set of challenges. Adoption of wind makes the system somewhat more fragile and at the same time we need to be able to accommodate the large amounts of renewable variable generation on the system. Selecting the right grid technology is key to that challenge.

I return to the choice of technology for the North-South interconnector. The key point is that an AC overhead line solution as proposed by EirGrid naturally reinforces and strengthens the overall stability of the all-island network to respond to disturbance. It tightens the coupling of the two electrical systems North and South and makes them more robust operating as a single system. The expert commission uses the term “inertial coupling” to describe this behaviour which occurs when AC systems are linked together or when systems are built using AC technology. While it is an inherent part of AC technology behaviour, it is not an inherent part of HVDC technology behaviour. An AC solution would give us increased coupling between the North and South systems - inertial coupling - but an HVDC solution would not do that. It is possible in theory to put in place complex control systems to make an HVDC circuit act more like an AC circuit. However, it is unclear how far this can be achieved. It is probably impossible to fully emulate an AC solution and it has certainly never been done anywhere in the world to date.

In addition the dependence on control systems in itself introduces more risk and while that may not sound like a major issue, there are a number of instances internationally where control system failures have caused or contributed to major disturbances or blackouts in other countries and continents. The inherently different performance of HVDC is a key point given the particular characteristics of our network. One of the expert commission speakers earlier said it is possible to make an AC and DC circuit operate in parallel. We are not aware of anywhere that this has been done. The examples given by the expert commission are not parallel examples. In the case of the France to Spain interconnection there are two very large systems already connected by several AC circuits. The important inertial coupling we require from the North to South interconnector is not a requirement to the same degree for the France to Spain link.

I move to cost. The commission has provided cost comparators which concluded that an HVDC solution would be €330 million more expensive than a standard 400 kV AC overhead line solution, or three times the cost. In general, cost differences are more reliable than cost ratios so I will generally refer to differences rather than ratios. The commission also presented some HVDC costs for lower-rated solutions, for example comparing a 700 MW capacity HVDC solution with a 1,400 MW capacity AC solution and estimated a cost multiplier of 1.7. We are unclear of the purpose of this but can confirm that a capacity of 700 MW does not meet the goals or requirements of the project. So the only valid comparison is a like-for-like capacity.

From the table on the slide headed “Cost Review” it is clear that the cost of the HVDC to

AC convertor stations adds significant costs to the HVDC solution when compared with the AC solution. This is an inherent consequence of the technology choice.

We note three primary points on the commission's estimates. First, the commission has not included the cost of a substation at or close to Kingscourt in its cost estimates. We may not and probably will not include the Kingscourt substation in our initial planning application as the need for it has receded owing to the reduction in demand as a result of the economic situation. However, it is still very much part of the overall project scheme and will be required to provide adequate supply standards to the north east in coming years. Based on the converter station costs estimated by the expert commission, it will add at least €100 million to €150 million to the cost of the scheme when it is required. Further to this, while the County Cavan substation is a known requirement at this time, it is likely in the future that there will be further requirements to tap into the circuit for other development purposes and if an HVDC solution is adopted, these significant additional costs will be incurred each time.

Second, while the Commission has recognised that electrical losses would be significantly greater for an HVDC solution at the typical operating loads for this project, it has omitted this from its cost estimates on the basis that future energy prices are unpredictable. In our experience it is good practice and common practice to include major lifetime cost elements in transmission investment decisions - we do so routinely. Inclusion of electrical losses will add approximately €70 million to the cost of the HVDC solution. Third, the costs of the cable element - more so than the converter elements - proposed by the Commission appear low based on other available data and references.

The first two of these points - leaving aside the cable cost issue - would increase the extra cost of an HVDC solution from €333 million to approximately €500 million to €600 million when compared with an AC solution. However, it should be recognised that there is concurrence at least that an HVDC solution is more expensive than an AC solution to the tune of several hundreds of millions of euro.

I wish to pick up on some points made earlier. Deputy English asked to what extent failures were an issue. I will make two points on that. First, the question was answered in the context of reliability of the scheme. The question might have been aimed not only at that, but at the potential impacts of a failure on the power system and reliability of supply. It was answered that failures are relatively infrequent and can generally be fixed relatively quickly. I wish to draw two examples from a report issued at the end of January. It mentions a 380 kV installation in Berlin which suffered a serious fault in December 2009. That fault was proven to have occurred as a result of a latent defect in the installation of the cable ten years earlier. It took ten years for it to materialise and resulted in the unavailability of the cable for ten to 12 months. Another example is in the Middle East where at present a 55 km cable circuit has been installed. It mentions that there have been ten joint failures - six during service and four during testing. The reported response time to fix those joint failures averaged two months.

There are still significant reliability issues there, but the more significant point is the impact on the power system. In the event of a failure of the control systems, about which some of the commission experts spoke briefly, unless the system is properly managed and its use is limited, a mal-operation could have the impact of putting all or part of the system in blackout. That was possibly to what Mr. Hoelsaeter referred when he said that an HVDC cable could provide black start - I am not sure about that. However, in the event that there was a blackout in one part of the system, I accept that we can restart it using the cable, but the blackout is not a tolerable event in the first instance.

Supply of cable was mentioned. We do not see supply of cable as being the major issue. There will be a supply chain difficulty with cable because so much more is being used for submarine applications. While it will tend to push up the price, it should not mean there will not be availability of cable to develop these projects. Manufacturing the cable for the east-west interconnector, which uses approximately 500 km of cable, occupied the full capacity of a major cable factory in southern Sweden for two years. It is, therefore, a significant issue. We are not saying that we do not believe it will prevent projects from happening but it may well result in higher prices of projects which are based on cable technology.

I will leave it at that and hand back to Mr. Byrne if he has any concluding remarks.

Mr. Dermot Byrne: I will hand back to the Chair. We are happy to take any questions.

Chairman: I thank all three contributors. There is a divergence of opinion on, or possibly of interpretation of, the expert commission's report. I will offer the floor to Deputy Ferris first and will get to everybody.

Deputy Martin Ferris: Go raibh maith agat, a Chathaoirligh. I wish to thank both the ESB and EirGrid for their presentations. I have one question for the ESB representatives. Would they have handled this whole debacle any differently than it has been handled by EirGrid, in particular regarding the alienation of local communities and the public at large? I would argue, as would people who know the communities involved, that they have behaved responsibly and support the entire project in principle. Where they differ is on the methodology that would be used in bringing about the system that needs to be done.

I would also argue that confidence has been lost, particularly in EirGrid, by communities and people generally. I have examined some figures in a submission given by Deputy Damien English at the oral hearing where EirGrid was supposed to have said it is 20 to 40 times more expensive to lay cables underground. A source in the *Irish Farmers Journal* said it was ten times more expensive, while another reputable group said it was five to seven times more expensive. That type of terminology, inflating the cost factor, has done huge damage to the relationship with the public which, in principle, supports the objective and the delivery of the project.

The commission believes that if the will is there, much of what needs to be done can be done underground. While it counsels against a fully underground AC solution, it says technology is available that would contribute to putting a certain amount of the project underground.

Have areas been identified on the route that could be put underground? If so, what distances are we talking about? I think five or ten kilometres were mentioned. I live in Tralee where they managed to bring it underground from the windmills. I know it is totally different but they were able to do that because the will was there. A lot of things can be overcome if people are prepared to be flexible and work with each other through a negotiated dialogue.

This is all about costs, rather than people's rights and entitlements. It is also about inflating the perceived costs in order to try to break down people's will. People have concerns about the environment, health and safety, and what such a development could do to property values. Nonetheless if it is approached properly, the technical people would be satisfied that much of the line can be put underground. The commission has given us costings of 1.7%, which is a small price to pay for community involvement and support. All of that can be recouped at a later date by putting 0.7% on to the ESB costs.

Is EirGrid prepared to continue to negotiate with communities? Is it prepared to listen to what communities have to say? Is it prepared to take into consideration all of their concerns? Effectively, the commission's report agrees with much of what the communities are saying anyway.

Mr. Dermot Byrne: I will kick start and then Mr. Jerry O'Sullivan can speak. I know that Mr. Andrew Cooke may touch on some of those questions. The issue of general community acceptance is at the heart of this matter. We put a huge effort into our communications on all our projects. We have a large number of active projects, either at construction or planning stage around the country. We are currently interacting with hundreds of landowners and thousands of members of the public. We do that in a structured and organised way. In the vast majority of cases we do reach agreement and projects proceed through to planning and build.

In the last year or so, about 150 km of new build has already taken place, albeit at lower voltages. There is a lot more in progress which will be completed in the coming years. We continually try to improve how we do that. We have a consultation road-map and have put a huge effort into arranging meetings with individual landowners and community groups. We do not take our responsibilities lightly and put a huge effort into it.

A number of cost issues were mentioned as well as what we have said about costs. I will ask Mr. Cooke to take that point.

Mr. Andrew Cooke: From the outset of this project we have used a range of six to ten times as the estimated multiplier for underground AC. The discussion at the time was primarily around AC, but the multipliers probably hold reasonably well for HVDC as well. We have certainly stated that cost multipliers of much greater amounts - such as 20, 25 or 30 times - have been reported by other utilities in particular circumstances, for example, in cases where a tunnel is being deployed rather than the more normal techniques of direct or ducted burial. However we have consistently used the six to ten figure and we are comfortable that those figures are generally correct. Notwithstanding that recent advances in technology and HVDC are pushing to the lower end of that, we still believe they are reasonable figures.

As regards whether we have found sections to underground on this cable, as the commission said it is perfectly possible to underground short distances. We did not find any area along the length of this circuit that particularly distinguished itself as meriting undergrounding, as compared to any other section. If it were another project, that might be different; perhaps some area would stand out as meriting undergrounding more than other regions. We have not found it but the planning authority may.

Windmills are connecting into the system at lower voltages, certainly a maximum of 110,000 volts and usually less. At those voltages, undergrounding is technically much less challenging. Undergrounding at 110 kV is still comparatively expensive but the technical issues and risks that arise are very different from 400 kV.

In terms of it being a small price to pay, that is probably a matter for everyone in this room to consider - whether the extra cost is €333 million, as estimated by the commission, or €500 million to €600 million as estimated by us. We do not believe that either is a small price to pay in terms of affordability of infrastructure in this country.

Mr. Jerry O'Sullivan: I thank Deputy Ferris for his comments. ESB Networks, since its inception, puts a significant effort into dealing with its customers and landowners. Coming

from a rural background, we both know many of the retractable problems are often getting a supply to a new house past someone else's land when there is a field at play. One cannot do enough communication, showing respect for everyone's position and working with the farming community and landowners. We try and do this on the basis of mutual respect and bringing the better good of the project to the fore.

I agree with Deputy Ferris that it is a huge piece of the equation and something of which we have a lot of experience. Over 80% of wind farms are connected to the distribution system so we are familiar with that.

Mr. Denis O'Leary: Regarding the question about the Tralee project, if memory serves me right the name of the wind farm is Tursillagh which is 38 kV. The technical challenges associated with undergrounding at that level of voltage are different to the technical challenges associated at 400 kV. Thirty eight kV is a common voltage that we would underground in networks in Dublin, Cork and Limerick but it is still more expensive than building overhead. The additional costs associated with the infrastructure project in question were fully borne by the developer. No costs were passed on to the electricity customer.

Deputy Martin Ferris: The very same arguments were made on the costs for the Tursillagh project as has been made by EirGrid and it is just scaremongering. EirGrid is trying to convince people it will cost too much to underground and would be much cheaper by going overhead when the evidence I have is different. The cost is not that much more. The undergrounding costs in the Tursillagh project were borne by the developer and he got kickbacks when it came to the amount of electricity he could put on the grid.

EirGrid and ESB Networks have done themselves much damage by throwing out the claim undergrounding will cost 20 to 40 times more. As Deputy English said, on what are you basing these claims? The international commission told us an entirely different figure earlier. It is not fair and it is not doing any justice to the argument.

Mr. Dermot Byrne: To be clear, we have said AC at 400 kV undergrounding is six to ten times more expensive than overheading. We have also said it can go to much higher levels. The Ecofys report commissioned by the Government several years ago also gave the same figures. When one goes into different types of tunnel technology, the cost can rise up to 25 or 30 times. The independent commission also gave figures of an extra €10 million per km for AC undergrounding. That is consistent with the numbers we have put out.

Deputy Martin Ferris: What about the three times more expensive claim?

Mr. Dermot Byrne: The three times more expensive claim applies to undergrounding HVDC technology. The other figures of 25 times for tunnel type technology referred to AC undergrounding. We have to be clear to which technology we are referring.

Deputy Damien English: The figure of 25 times and 40 times more expensive was used by EirGrid staff. I am not misquoting anyone. I would not put it on the record of this committee on numerous occasions or at An Bord Pleanála hearing if I was not 100% sure of what was said.

Chairman: The options that seem to be the primary consideration are overhead AC with maybe some underground AC or DC underground. The one option the report ruled out was AC underground for the whole or majority of the route. If this debate is to be worthwhile, what we are comparing here is an AC overhead route versus an underground DC route using converters and what limitations that puts on the system and the network.

Mr. O’Sullivan’s costing of 0.7% extra is based on the €333 million as opposed to any higher figure.

Mr. Jerry O’Sullivan: Yes.

Deputy Noel Harrington: This particular project is a long way from the constituency I represent. Could Mr. Cooke give the names of the reports on the Berlin and Middle East failings he referred to earlier for the record?

EirGrid referred to the difficulties with connecting the HVDC system to the AC system. Mr. O’Sullivan, as a Cork man, is very proud of ESB Networks and pointed out it is considered the top three in the world. Is it good enough to overcome that challenge?

There are always difficulties with and deficiencies in public consultation. The point has been made by EirGrid and ESB Networks that they can never consult enough. Some of the cases I have encountered in west Cork, however, lead me to believe the two companies could do more and certainly learn more about public consultation. Some of the problems were personal-ity driven, unfortunately, which could have been handled better to achieve good results for the communities involved, EirGrid and ESB Networks.

We are told undergrounding to this extent has never been done anywhere else in the world. How afraid are EirGrid or ESB Networks of creating a precedent? We can deal with costs separately. In the reports, it seems the two agencies do not want to be the first to underground because of pressure coming from communities.

Mr. Jerry O’Sullivan: I took some time during our presentation to explain the respective roles. As a distribution system operator, the Deputy is correct that the ESB is seen as the third most advanced when it comes to smart metering, electric vehicles, and the integration of wind on to the distribution system. The latter is a unique problem for Ireland because in foreign jurisdictions most of the wind is connected directly to the transmission system. The target in Ireland is 40%. We have done pioneering research on how to get so much wind generated energy on to the distribution system.

In regard to the other factor, as I previously noted, we are only the contractor. We have never built HVDC and we take the technology in that respect. We are not the experts in that field and I would bow to the superior knowledge of expert committee and EirGrid in that area. We are a taker which builds the plant that is available in the market. As a small country, it would not be good practice for us to carry out that preliminary research because we do not have the necessary competence. We are a taker and a builder but we do not have a magic bullet.

Mr. Dermot Byrne: In regard to the challenge of innovation and using new technology, we are one of the few system operators using this technology. Very few operators are building with VSC HVDC systems at present. When the east-west interconnector is completed in September it will be the largest VSC interconnector to use this technology.

We are transforming the power system in terms of using higher levels of wind than any other country. We are recognised in international publications as being at the cutting edge of technology in integrating wind into the power system, with all the challenges that brings. Grid 25 is another example of our use of cutting edge technology. In developing the grid to do all that we want from it over the next ten to 20 years, it is much easier to upgrade the existing grid than to build new lines. We are upgrading 2,500 km of existing grid using high temperature, low sag technology, which is new to Ireland. The commission’s report refers to this technology, which

we are one of the few to use in a programmed manner to upgrade the grid.

Our concerns are not about the want of innovation or any other issue but about the reliability of supply to companies such as Intel and Aughinish Alumina, which rely on a high quality and reliable power supply. We are not going to put that at risk unless we are satisfied that the technology can do the job for which it is designed. The committee can rest assured that we do not fear new technology and that we are ahead of the curve in many areas of technological innovation.

The commission recognises that every project is different, however, and Mr. Cooke has explained how the North-South interconnector project differs from others. It has been suggested that we should parallel the existing AC connection with HVDC but we are concerned about what happens to the synchronicity between the two systems if the AC connection goes down. Will it cause significant brown outs or black outs in the system? That is our primary motivation and it is our responsibility to take this possibility into consideration because we have to live with the consequences.

Mr. Andrew Cooke: The report to which I referred was the Electricity Transmission Costing Study, which was carried out independently by experts from Parsons Brinckerhoff in association with Cable Consulting International and was endorsed by the Institution of Engineering and Technology in the United Kingdom. The study gave detailed consideration to the comparative costs of AC overhead, AC underground and HVDC underground.

Senator Thomas Byrne: While it is the witnesses' first occasion to appear before this committee, some of them appeared before the committee in its previous incarnation during the last Dáil. It is important to note this because it has been suggested that the issue has not been aired in the Oireachtas previously. It is worthwhile to revisit the issue, however, because much has happened in the meantime. I have had arguments with EirGrid in the past and probably will do so again, but in the context of representing our constituents or attempting to persuade the witnesses to change their minds, it is important that we acknowledge that some of the work it is doing on a macro scale is innovative and is bringing benefits to this country. Is EirGrid waiting for instructions from the Minister for Communications, Energy and Natural Resources or the Government as to how it should proceed on the project and will it be obliged to comply with such instructions if and when they issue?

Mr. Sullivan appeared to differ from EirGrid's position when he agreed with much of the findings of the commission's report, particularly in respect of the cost estimates. ESB Networks believes the HVDC route is technically feasible but EirGrid's preliminary re-evaluation report rules out this technology without further consideration. It does not even go as far as Mr. O'Sullivan on the matter.

Mr. Cooke suggested that no part of the Beaully-Denny project was brought underground but I understand the commission report described parts of it as running underground. Is that the case? I will not get into the technicalities of AC/DC because they have been well aired previously. Reference was made to the Kingscourt substation. Is that the proposed substation in Moyhill, County Meath? Was a public announcement made to put it on ice? I missed it if there was such an announcement. Has land been purchased for the project and how much money has been spent on it already?

Mr. Dermot Byrne: In regard to Senator Byrne's question on whether we are awaiting instruction from the Minister, we work within a policy framework and the planning legislation

to balance the important issues arising around health, the environment and the impact on the landscape. The Minister has stated that he will enter into a period of consultation, which included his referral of the project to this committee for its consideration, and will then prepare a memorandum on security of supply for the Cabinet. The first phase of the consultation includes the important discussion we are currently having and the outcome will set the policy framework within which we will operate. I do not know what the Minister will bring to the Cabinet but I expect he will reinforce or expand that policy framework. We will have to await the outcome of the process but the policy framework is essential for us.

Senator Thomas Byrne: Will the Minister be telling EirGrid what to do?

Mr. Dermot Byrne: I am not sure if making a technology choice is the right thing to address in the policy space. The key issues for us are the policy objectives to be achieved and we will work within the policy space.

Senator Thomas Byrne: Have the Government and this committee a role to play in the matter? If the Government is not going to make the technology choice, will the key decisions in the broad sense in terms of going underground versus overground be made by politicians or by EirGrid?

Chairman: The object of today's exercise is to allow the different sides of the argument to be aired. The overriding rationale behind the project is to ensure an integrated grid that is robust and can deliver what it is asked to do. If the overriding rationale behind the project is to ensure an integrated, robust grid that can deliver what is asked of it and the practicalities of either of the main options that have been considered feasible, then the cost has to be built into it and the social impact and other issues to which reference has been made. This forum allows for this to be thrashed out in public, which is probably the only way that can be done. The Minister has indicated that he has to prepare a memorandum and he will review the findings of this meeting. Departmental officials will appear before the committee next Wednesday in order that we can conclude our work. That is the reason we are having this discussion in the first place. I am not sure EirGrid will be in a position to make the final decision, no more than myself or the Senator. Has Mr. Byrne a comment on that?

Mr. Dermot Byrne: I defer to precisely what the Chairman said. There will be a memorandum to Government and that will set out the policy framework within which we have to operate. We await that and look forward to seeing what comes out of that process. I believe this process is an essential element of that. Mr. Cooke will deal with the other questions.

Mr. Andrew Cooke: With regard to HVDC, we discussed it at some length in the previous planning application and that concluded that, because of the additional technical risks and limitations, which were not offset by any technical benefits for this particular project, and the extra cost, it was not suitable technology to bring forward for this project. We concluded in the preliminary re-evaluation report that is still the case. Developments since have not been of a nature that would change that outcome.

On the Beaulieu-Denny project, my understanding is that none of the 400 kV line will be underground. I do not immediately recall a reference to it in the expert commission report but it is intended, as I understand it, to underground some lower voltage network in the vicinity of the project. This is being adopted more generally internationally. Where a new high voltage line is being built and amounts of lower voltage can technically be undergrounded, which are less of an economic burden, this is being adopted. My understanding is that none of the 400 kV line at

Beaully-Denny is going underground.

Moyhill is the substation we are referring to. It will still form part of the scheme. The question is around the timing within which it is required. Clearly, the growth rates nationally as well as in the north-east region have reduced since we originally planned the scheme and it looks like the need for that substation has gone back a number of years. It is currently our expectation that we will not be including it in the next planning application but that, depending on what happens in the interim, could change. That is our expectation today. It will be required in due course.

Senator Thomas Byrne: I have a few questions that Mr. O'Sullivan might answer. He does not seem to be at one with what EirGrid said in its conclusions, which is that the HVDC is technically feasible from a construction point of view. I accept that is different from network issues but he also agrees with the costing in the report.

Mr. Jerry O'Sullivan: I am happy to clarify my comments from the point of view of construction, which is our area of experience. As Mr. Byrne said, losses were not included by the expert commission. We do not have data, because we are not system operators, to identify any of that and, therefore, my comments were exactly as I said, which is from a straight construction point of view putting the infrastructure into the ground, we agree with the factor of approximately €335 million and we agree that, from a technical factor, putting it in the ground as distinct from operating it, both are doable.

Deputy Ann Phelan: The comment was made that Ireland is different. It seems that a significant element of how we deal with the connection is based on wind energy and that is connected to the connection. If we do not get it right, could the benefits of wind energy be negated? The province of Cadiz in south-west Spain has most of the country's wind turbines. Is Mr. Byrne familiar with how these were constructed and fed into the Spanish energy network?

Mr. Dermot Byrne: We have probably achieved a world leadership position in dealing with the challenge of integrating wind energy into a power system. We are familiar with what happens in Spain and other countries. The difference is that the challenge for us is last year wind energy accounted for approximately 16% in total in Ireland but that is an average. Typically, during a high wind period, we are getting to instantaneous amounts of wind energy of 50%. That is staggering and, therefore, 50% of the electricity for lighting, etc., can be from wind. We stop it at 50% because we are afraid at this point to go beyond that but we have a programme of work that over the next three to five years will get us to 75% instantaneous supply. No other country is doing that and we need to do that to get to the average of 40% by 2020, which is a Government target. It is understood and acknowledged internationally that we are probably at best practice in this space.

The specific issue of grid development to support that and how we do that is important and it is tied in. It is not as though the wind is directly connecting to this line but wind is connecting into the system in Northern Ireland and in the South. We have two systems that are coupled with one AC line. What happens if that line goes down and how will the imbalances in the system be managed? One system will increase in frequency and the other will decrease.

Deputy Ann Phelan: Is this the coupling issue?

Mr. Dermot Byrne: Yes and that issue can lead to brownouts. We recognise what the commission is saying about replicating the behaviour of AC using complex control systems. We

believe that may not be good enough for the Irish system because of its lightness. There is a big risk that we are concerned about.

Deputy Mattie McGrath: I apologise for being late but I thank the representatives for their submissions. In the comparison of the price structures for overgrounding and undergrounding, have they taken into account the compensation to landowners for the erection of overhead pylons? I do not think it is included and that amount would be considerable.

Mr. Andrew Cooke: In so far as we have taken it into account, we made estimates in our cost comparison of land compensation. I do not know whether the expert commission has taken that into account in its cost comparisons.

Deputy Mattie McGrath: Can the committee seek clarification on that?

Chairman: Yes. If there are questions, we will them to the commission.

Deputy Mattie McGrath: My information is the commission has not taken these costs into account. That is only one aspect that could have a significant impact. Let us be fair and examine everything objectively.

Chairman: I would like to clarify what the Deputy is seeking. He referred to the compensation for going underground versus the compensation going overground.

Deputy Mattie McGrath: I referred to overground because it is much more intrusive and the compensation would be much higher. If it is undergrounded, there is no compensation. Going overground impacts on space and there is inconvenience.

Chairman: When the committee meets to consider questions that need to be forwarded to the commission, we will consider that issue if the Deputy wants to propose it.

Deputy Mattie McGrath: I do.

Deputy Michael Colreavy: I thank the witnesses for their excellent presentations. I would normally be challenged by some of the engineering terminology used, but they have broken it down and made it simple. Everyone in this room agrees that we must have secure stable supply of electricity not just for today but for decades into the future. We must never find ourselves forced to turn down an industrial or commercial development because we do not have a good supply. The problem is how we do it in such a way that minimises the adverse effects.

On the question of underground versus overground, as I said in my comments to the representatives of the expert commission this morning, generally we have considerable technical and economic information, some of it conflicting, but we do not have good research information on the adverse impact of such projects on people in terms of tourism, agriculture, and land and house sale values. I believe we do not have such information because those matters are difficult to measure. These factors are then dismissed as a NIMBY, not in my back yard, attitude but it goes deeper than that.

Are any research data available that give a measure of the adverse impact of overground 400 kV lines across land and over people's heads? Mr. Byrne mentioned that EirGrid works on an all-island basis with a company in the Six Counties. How are investment decisions and technical choices made given that they affect the Six Counties and the Twenty-six Counties? What happens if EirGrid has a preference for one option and the company in the Six Counties prefers another? How does it work for policy differences between the Government here and

that in Stormont? How were the costs apportioned? I believe EirGrid estimated the increased customer cost for underground at 0.7%? Would that be just for customers in the Twenty-six counties or customers throughout the Thirty-two Counties?

Mr. Dermot Byrne: I absolutely agree with Deputy Colreavy in terms of the points of agreement. The question on which we give huge focus is how we can minimise the adverse effects. We have to recognise that we have a planning system that is designed to balance some of those. In the planning system those issues get aired. I believe that is the right forum for getting that balance right. At the end of the day the role of the planning authorities is to balance the impacts on the environment with not having the infrastructure or having infrastructure that is too costly. It is not an easy task, but that is their role.

Regarding assisting the planning authorities with research, we are doing some research in trying to get a handle on some of those impacts. In any future planning application we would hope to be able to bring that research to the planning authority. That is all I can say on it at the moment.

Deputy Michael Colreavy: I seek clarification on one matter. Does a planning application require an environmental impact statement and would an environmental impact statement not require that EirGrid would have done that research?

Mr. Dermot Byrne: Very much so.

Deputy Michael Colreavy: However, it has not been done.

Mr. Dermot Byrne: We are doing additional research which I hope will get better information to enable the planning authority make its decision. I refer the Deputy to the Ecofys report, an independent study commissioned by the Department in 2008 or 2009. It addressed many of the environmental impacts that come from overhead and underground options. There are impacts from both. That report, which is totally independent of EirGrid, also gave some very good information on environmental impact. That is a good resource, to which members of the committee might wish to refer.

Deputy Michael Colreavy: My second question was not answered. How were the decisions made given that it was for the Thirty-two Counties?

Chairman: Pricing.

Mr. Andrew Cooke: Fundamentally the decisions are made by each responsible company, North and South. At the moment Northern Ireland Electricity is responsible for transmission development in Northern Ireland and EirGrid is responsible for the standards and specifications in the South of Ireland. Obviously any solution needs to be compatible. The decision as to how costs would be apportioned if a different decision were made in one jurisdiction from that made in the other would be a matter for the energy regulators. The existing arrangement is that the costs are borne by the customers in the jurisdiction in which they arise. Northern Ireland customers pay for network infrastructure in Northern Ireland and customers in the Republic of Ireland pay for network infrastructure in the Republic of Ireland.

Deputy Seán Conlan: I have seven questions on which I seek answers. On what date will the economic evaluation for the North-South interconnector be published? If it is to be published, why is it taking so long to publish it? What is the net present value of the proposed North-South interconnector? I believe Mr. Cooke said the independent commission report

states that 23,000 km of overhead high-voltage power lines would be commissioned in the next ten years. Where is this stated in the commission report? Why was the North-South interconnector project omitted by EirGrid from the Grid 25 strategic environmental assessment, which is a legal requirement of EU Directive 2001/42/EC, as reflected in Irish law in SI 435 and SI 436 of 2004? Did EirGrid examine a specific underground route and how detailed was that report? If it did not, given the lack of information in EirGrid's pre-evaluation report regarding HVDC which runs to half a page in the report, will it now consult with the local communities on finding an underground route on the basis that the independent commission report states that it is feasible?

While I was not going to raise this matter, Deputy Anne Phelan mentioned that putting the connector overground would speed up the output of wind generation in Ireland. It has been suggested that an underground solution would increase the unit costs. However, I wish to ask the question directly to the representatives of ESB. Would an increase in electricity generation from wind increase or decrease the unit cost of energy for consumers? What does the international evidence suggest?

Mr. Andrew Cooke: I am not sure of the economic evaluation report to which the Deputy refers.

Deputy Seán Conlan: Different individuals have tried to work out whether this report makes economic sense from Ireland's perspective. The Beaulieu to Denny line was mentioned. A report on this is freely available, which anyone can read to see whether it makes sense from the perspective of taxpayers, consumers and the company. Why has such a report not been made available for this project? Will such a report be published and, if so, when?

Chairman: Bear in mind the international expert commission's report was published on 17 January.

Deputy Seán Conlan: I am asking EirGrid.

Chairman: Yes, but the Deputy is asking whether an evaluation report would be done-----

Deputy Seán Conlan: On the entire project.

Chairman: -----armed with the commission's report. I am not trying to answer the question for EirGrid but the commission's report has been published for only a month and it would be difficult to have evaluated it prior to publication.

Deputy Seán Conlan: I do not believe it was done with regard to the overground solution already proposed by EirGrid.

Chairman: Perhaps Mr. Cooke would like to answer.

Mr. Cooke: We have done various studies, and statements have been made by others such as the Commission for Energy Regulation, on the cost benefit of the project. A specific economic evaluation report has not been published so far as I am aware. We will certainly address the case for the project as part of the planning application. Certainly we can examine conducting a specific economic evaluation report if it is desired that we do so while progressing towards making a planning application.

I will have to check the matter with regard to the 23,000 km. I understood it to be in the report but it was not intentional if I have misquoted it. The European ten year network develop-

ment plan prepared by the European transmission system operators, TSOs, plans 23,000 km of new 400 kV construction over the next ten years. Therefore, it is factually correct. However, if I incorrectly stated it is in the report, I apologise.

The Grid25 strategic environmental assessment, SEA, was a study on the Grid25 implementation plan generally. Again, I will have to examine the extent to which the North-South project was considered any more or less than other projects in the strategy.

With regard to undergrounding, as Mr. Byrne stated earlier, we will wait to see what is contained in the security of supply guidelines referenced by the Minister in his statement. It is still our position that an underground solution is not appropriate for this project based on cost and technical issues regardless of the route.

Mr. Jerry O’Sullivan: The Government’s target of 40% for wind is driven from policy perspectives such as CO2 and the fact that Ireland is approximately 90% dependent on imported fuel, that it needs to be more independent and therefore should exploit its rich resources such as wind. In the longer term it is seen as giving value and independence to Ireland. Our present goal is with regard to the price of electricity in terms of its constituent elements.

Mr. Dermot Byrne: We and the Sustainable Energy Authority of Ireland, SEAI, conducted a study approximately 18 months ago on the impact of wind on the wholesale energy market, and because wind has a zero incremental cost - as wind blows there is no fuel or cost - it suppresses the system marginal price in the wholesale energy market which in turn suppresses the costs to suppliers and consumers. This suppression of the system marginal price balances out the special support schemes in place for wind. This was a very positive result for wind power. There are also all of the points made by Mr. O’Sullivan on indigenous energy, the obligations we have at European level to reach 40% by 2020, the huge potential for jobs here from renewables and moving towards an export industry. This is very much on the cards and many committee members are aware of these moves.

Deputy Seán Conlan: I find it incredible that somebody from the ESB cannot tell me, based on international evidence, whether extra wind generation on the grid would increase or decrease the price of energy for domestic consumers. Mr. Byrne mentioned when wind blows it has a suppressing effect on the cost of wholesale energy. What happens when the wind does not blow? Is it not a passenger on the grid which is an additional energy supply cost?

Mr. Jerry O’Sullivan: To address what Deputy Conlon described as unbelievable, in the earlier part of my presentation I described how ESB Networks is a completely ring-fenced part of the ESB with a separate board. As per third package legislation in Europe, staff in my organisation have no visibility of information on generation, supply or pricing. These are completely separate. I do not have any knowledge of the information quoted by Mr. Byrne, and this is intentionally how the market is constructed to ensure in my role in ESB Networks that no favouritism whatsoever is given to any generator or any supplier. I do my business in the mode I described completely independent of price. Hence, I cannot quote prices on the market in the same way as Mr. Byrne can.

Mr. Dermot Byrne: Another issue arises with regard to the generation portfolio that is right for Ireland, including wind and reaching the 40% target, which perhaps requires a far greater and longer discussion. In a nutshell the great advantages of wind are that we have a lot of it and it is indigenous so it replaces fossil fuels which must be imported from elsewhere. It is good with regard to energy and being indigenous but it is less good with regard to capacity. When

it does not blow, we need other sources of generation. This is how the system has developed.

Chairman: I am conscious we are moving away from the nuts and bolts of the report. On the specific question, I do not know whether it was done by the CSO or Forfás, but as recently as two months ago an evaluation was done on the effects of wind on the unit price of electricity. It was more or less in line with the study Mr. Byrne mentioned which was conducted 18 months ago with regard to the reduction in grid price caused by wind being equal to the amount of the PSO and REFIT paid in the first place. Securing extra renewable supply and other benefits is cost neutral on the grid system. Those of us who were members of the previous Dáil and who were members of the Joint Committee on Climate Change and Energy Security had an opportunity to visit EirGrid. We also examined the pricing structure and how the various supply generators to the grid have an impact on price. It is priced on a half hourly basis all day every day in, as Mr O'Sullivan stated, a regulatory period of five years.

We have much work to get through and I am not sure where we are going with this discussion and whether it is relevant to the report.

Deputy Seán Conlan: I fully understand the point made by the Chairman but I specifically asked the representatives from the ESB and EirGrid for their opinion on this.

Chairman: Is this in the context of the report?

Deputy Seán Conlan: There is a theory that if we build the North-South interconnector quickly and overground, we will expand the grid and bring in wind generation from the west and somehow this will be of benefit to Irish consumers and taxpayers. I want to tease out whether going ahead with the overground interconnector, expanding the grid and increasing wind power in the west will increase or decrease the unit cost of energy for Irish consumers. I thought that as the ESB and EirGrid are before the committee, it would be appropriate to ask them.

Chairman: Regardless of whether it is quick or slow, the question was asked as to whether it is necessary and everybody has accepted that it is.

Deputy Seán Conlan: In fairness-----

Chairman: Sorry, hold on. I have not interrupted too many people. It is also necessary to have an all-Ireland grid that secures supply. Almost everyone, including those who have raised serious questions, has acknowledged the need for a robust grid. Deputy English is next, followed by Deputies Humphreys and Ó Caoláin and the Minister of State, Deputy McEntee. At the conclusion of this session, we will stop for a break of 45 minutes. For a particular reason, I will certainly need one.

Deputy Damien English: We are discussing wind. Nature is an amazing thing.

We have come a long way. The original problems related to costs and the feasibility of putting the project underground. We are now discussing wind in Northern Ireland. There have been many changes. A great deal of the information communicated in the past three or four years was not always correct. For example, the information on costs and undergrounding was proven wrong.

I cannot get my head around the idea that wind poses an issue in terms of AC versus DC. Mr. O'Sullivan stated it was a distribution problem, yet the line under discussion is mainly transmission infrastructure. Why does wind make a difference? There is wind all over the

world. Some places have more than we do. If Mr. O'Sullivan cannot explain it today, perhaps he could send us a briefing paper. It does not add up. Having read through all of my notes from our many previous debates, it was never raised as a problem.

I cannot get my head around the question of why Northern Ireland has a major problem with joining the two projects together. The experts are adamant that there is no problem or, if there is, that it can be easily overcome. They seemed to be in no doubt in this regard, yet Mr. Cooke seems to be very much in doubt. We need to close the information gap.

It has been claimed that, since France and Spain have a few AC connections, building a DC connection would not pose them a problem. We already have an AC connection with Northern Ireland and people are suggesting that a DC connection be built. I imagine that the connections in Spain and France are much larger than the connection in Ireland and Northern Ireland. I may be wrong. Perhaps the witnesses can explain why it is not a problem for them while it is for us. It does not add up.

It has been stated that the high voltage direct current, HVDC, solution does not deliver the same benefits as overhead cables. Does it have any benefit? The commission sees many benefits and outlined a list of pros and cons, but I am only hearing negativity from the witnesses. Perhaps we could discuss and work on the positives.

The witnesses question the commission's figure on the cost of the underground cable, yet they do not question the commission's figure in respect of the overhead lines, despite the large difference between that figure and their own. Given the witnesses' original figure, it is not three times the cost. At their figure of €500 million, it is not even twice the cost. Perhaps we could have some clarity concerning the witnesses' figures for overhead lines. We have been told that the cost of underground cables has reduced, yet no one has referred to the cost of overhead lines reducing.

The witnesses do not necessarily agree with the commission's cost figures. This morning, the commission told the committee that its cost projections had been supported by recent projects. It seems to be in a strong position and can stand over its assertions. We must sort out the difference. Perhaps the witnesses can respond.

If the Chairman wants me to stop, I can contribute later. The witnesses stated that the commission did not refer to losses, but it did. According to it, there have been major developments in the reduction of the losses suffered by cables versus overhead lines. It also stated that the reduction in losses is greater when the power flow is increased. The commission cannot get into the heads of the ESB and EirGrid in terms of their power flow. They are building a project that can carry much more power than is intended to flow through it. The power flow level affects losses. The commission does not believe there would be a major problem, but the witnesses claim there would be a significant difference. What is "significant" versus the commission's "hardly any"? These are important issues.

I wish to clarify a matter in respect of converter stations. Are we discussing one station or are some people discussing two, one at Woodlands and another at the other end? There will be a converter station at Woodlands following the other DC project. Regardless of the Kingscourt station, will it be one or two stations? I am seeking clarity for myself, as I might be slightly mixed up on this important issue. Regardless of what decision is made on the matter under discussion, a DC project could potentially meet an AC project at Woodlands.

The witnesses have supplied the committee with recent data on faults and reliability. They should give the data to the commission for comment. It was adamant that the faults would not take long to fix and did not pose a major issue. Since the data question that assumption, we need to clarify the matter.

I raised the question of cables because it was raised as an issue at previous meetings, in that it would take three or four years before the cable could be acquired. That is on the record. I am glad that it was not a problem after all. I will conclude on that point. If I missed something, I will revert.

Chairman: I should tell the Deputy that he cannot count, as he asked nine questions, not seven. Perhaps if we dismissed the cables-----

Deputy Damien English: I can never count. There are many in the room in the same situation.

Chairman: The Deputy's first question was on why wind was an issue.

Mr. Jerry O'Sullivan: I will address the distribution question. I apologise for any confusion, but I tried to use the slide to explain the different voltages because-----

Deputy Damien English: I can understand that.

Mr. Jerry O'Sullivan: Uniquely, a great deal of wind energy in Ireland is connected at distribution level, which is a challenge in itself. The important point is that the system is interconnected. The distribution feeds the transmission, which is the ultimate power system described by Mr. Byrne. They are interlinked. The stability issues EirGrid must deal with depend on the load feeding into the system. Some of it is wind energy connected at distribution level, but the big momma in town is the transmission grid, which must be stable. Mr. Byrne will probably address why it is the critical issue again.

Deputy Damien English: Is the wind problem not dealt with at distribution stage before it enters the system?

Mr. Jerry O'Sullivan: No. The systems are linked. Each line is linked to the next higher voltage and so on. If the system gets badly out of control and the frequency changes, the whole of the grid comes down. A stable transmission is the key issue.

Mr. Dermot Byrne: I will take the first question and hand over to Mr. Cooke. We have a light system. Ireland is a relatively small island. It is called an island utility because it is not connected synchronously with anything else. As our system moves, it does not affect the UK's. Although we are connected via a HVDC system, HVDC acts as a barrier between the two systems.

A light system is different to a system on mainland Europe or in Great Britain or Scandinavia. This can become a problem. For example, if a large unit such as Moneypoint on our system trips, the frequency changes and the whole of the system slows down. As it slows, it can reach dangerous levels and customers can be tripped off the network. There are examples of this happening. The most severe occurrence on my watch was on 5 August 2005 when, due to a combination of events, including the failure of the control system on the HVDC interconnector linking Northern Ireland with Scotland, we lost approximately 400,000 customers on the island. Things happen and there can be brownouts and blackouts.

We have a frequency issue because we are a light system. Mainland Europe does not have this problem. Wind is not fundamental to the problem, as the challenge exists anyway, but it exacerbates the problem. As one brings more wind energy into the system, one removes some of the conventional plants. Therefore, the system gets lighter and frequency is much more volatile. I refer the Deputy to Mr. Cooke's analogy earlier of riding a bike or driving a juggernaut and hitting a bump.

Deputy Damien English: I understand that. Why is that more of a problem for DC than AC?

Mr. Dermot Byrne: AC naturally brings inertial coupling. That is how it works. Whereas one has to effectively DC to behave that way by putting in complex control systems. That is only good enough up to a point. It does not give the solid inertial coupling which AC does.

Chairman: We need to move on. The question of France-Spain has been dealt with.

Deputy Damien English: No, not really.

Mr. Andrew Cooke: We have a single high voltage circuit connecting Northern Ireland the Republic of Ireland. Although it has a capacity of 1500 MW, typically it can only be operated up to 300 MW. The reason for this is, if it fails the two systems are separated, with one having a surplus in supply and the other having a deficit. It tends to be a bigger problem in Northern Ireland because its system is smaller. It might always be a bigger problem for Northern Ireland but it usually is. If we were sending 300 MW today to Northern Ireland and the connecting circuit failed then Northern Ireland would be short 300 MW. It needs to keep generation running in Northern Ireland even though it may not be economic in order to try to make good the difference. Also, keeping the supply in balance until the situation can be remedied would result in the loss of a certain number of customs. If we put in a second AC circuit, we could then transfer up to 1500 MW across the Border on the two circuits taken together. If one trips the other will instantaneously pick up the difference. That is an inherent characteristic of AC systems. If on the other hand the second circuit is a DC circuit and the existing AC circuit trips, the DC does not have that inherent response. While we still have a circuit between the two systems, we no longer have inertial coupling. Unless one can make the HVDC do the same as the AC with control systems there is significant limitation.

With regard to how much one can do to make DC work like AC, no one has yet tried to do this. As regards the France-Spain situation, there are already four AC circuits between France and Spain. So, if the fifth circuit is DC and even one of the four AC circuits trips there are three others to give that instantaneous response. Also, Spain has a much bigger system than Northern Ireland.

Deputy Damien English: That is the reason it needs three or four AC connections.

Mr. Andrew Cooke: Yes, we would not be able to make a case for three or four given the size of the systems here. In terms of benefits-----

Deputy Damien English: Mr. Cooke said that the DC cannot react instantaneously. How long does that take?

Mr. Andrew Cooke: We are currently looking at how quickly it needs to react. It needs to react quickly enough to prevent one or both of the systems going into black-out. It is not clear that can be done. No one has done it.

Deputy Damien English: Could it take days or weeks?

Mr. Andrew Cooke: No. We are talking about having to respond within fractions of a second.

Deputy Damien English: This is a fundamental issue. I apologise if I am annoying Mr. Cooke.

Mr. Andrew Cooke: The Deputy is not annoying me. I know how quickly it needs to react.

Chairman: The question that needs to be asked is not if it needs to react in a second, minute, month or a year but what is the impact on security.

Deputy Damien English: Thank you.

Mr. Andrew Cooke: Taking the example of 1000 MW flowing across the Border on the two circuits, roughly 500 MW on each, if the AC trips and we are exporting South to North, Northern Ireland would be short 500 MW. If the two circuits are AC there may be no generation in Northern Ireland. Unless the DC can respond quickly - we are talking in this regard about fractions of seconds - the Northern Ireland system will black out because it is short of supply and has no resources to restore the balance. It could be black-started but that would take some hours and Northern Ireland would in the mean time be in the dark. The same could happen in respect of the Republic of Ireland. The situation is the same in any scenario.

As regards whether the HVDC solution has benefits, it will to some extent increase the cross-Border capacity but not to the same extent as the AC because of these limitations. I understand the expert commission identified the primary benefit as being that it could be undergrounded if undergrounding was a goal. It did not identify any other major benefits of DC as compared with AC.

Deputy Damien English: It said it makes it further extension to the grid easier. However, Mr. Cooke says it makes it more difficult.

Mr. Andrew Cooke: Yes.

Deputy Damien English: Perhaps Mr. Cooke would elaborate.

Mr. Andrew Cooke: If one wants to build Kingscourt or to tap into the circuit anywhere else one would have to construct another converter station, which the commission estimates would cost approximately €155 million. An AC connection would cost X millions - single figures maximum.

Deputy Damien English: Mr. Cooke is saying that if we were to extend grid 25 we could, because there is already in place a connector at, say, Woodlands, go a different route which would be cheaper.

Mr. Andrew Cooke: Much depends on what one is trying to achieve. The commission has not carried out the network studies to assess the extent to which that is feasible. On costs and information, the commission referenced that it is aware of some projects where contracts have been placed. Other more recent information, such as the report to which I referred earlier, addresses the issue of costs in considerable depth. The nearest equivalent in that report is - admittedly this is a 75 km long circuit so that the cost ratios would be a little higher than for 105 or 140 km - build cost ratios of 9:1 and lifetime cost ratios of 7.3:1, which is substantially higher

than the commission's estimates. Again, we are looking for more information. There is a lot of detail in that report in regard to how those figures are built up.

Deputy Damien English: Has EirGrid assessed the cost on any identified route in the North?

Mr. Andrew Cooke: As I stated earlier, we would estimate that taking Kingscourt and electrical losses into account the cost difference is at least €500-€600 million.

Deputy Damien English: That takes into account the cost of the converter station. Has EirGrid assessed the cost of any particular route?

Mr. Andrew Cooke: An indicative cable route?

Deputy Damien English: Yes.

Mr. Andrew Cooke: Yes. We looked at an indicative one but it was not an exhaustive study. We found a plausible route. We did not look for the best route because we did not consider it fruitful to do so given that the costs and technical issues meant HVDC or undergrounding generally was not appropriate in our view.

Deputy Damien English: Did EirGrid examine costs?

Mr. Andrew Cooke: Yes, for AC.

Mr. Andrew Cooke: Would EirGrid be willing to consider it again using DC?

Mr. Dermot Byrne: We are building a DC link to the UK. We have 45 km on shore in Ireland. We know how to do this. We have done it.

Deputy Damien English: That is not the question I asked.

Mr. Dermot Byrne: On the cost issue, the biggest issue in terms of cost is the converter stations. Undertaking a detail survey of the line route will not make a difference in terms of cost.

Chairman: We must move on. Other Members wish to ask questions.

Deputy Damien English: Sorry, Chairman. I would like clarification on my final point.

Chairman: The three remaining issues are losses, clarification of the converter stations required and faults.

Mr. Andrew Cooke: I made the point that the expert commission did refer to losses and include a useful graph showing the losses for HVDC and AC alternatives but it did not include them in the costing. The costs are significant and in our view should be included in the costing. On the question of faults, faults on the cable are significant but are not the biggest issue. Repair times are significant and the technology is still young and subject to faults. In terms of getting cable, I contend it would take at least three to four years to get cable. That is not the biggest issue. One of our first actions on the east-west issue was to book a slot in a factory because the factories are full and booked up for some time to come. It would probably take three to four years for a factory to manufacture the scale of cable being discussed.

Deputy Damien English: I was looking for clarity on the station in order to put all doubt aside.

Mr. Andrew Cooke: We are talking about two convertors. The convertor being built in Woodland now is 500 MW and it will serve the east-west interconnector with Wales. One would need another convertor station to serve a link from Woodland.

Deputy Damien English: There is no possible way this station can do both.

Mr. Andrew Cooke: It could not while delivering the benefits of both projects.

Deputy Damien English: It is possible.

Mr. Andrew Cooke: It is technically possible. When high voltage direct current, HVDC, breakers become available it will be easier than now. It would be difficult now but perhaps not impossible.

Deputy Damien English: Is there an issue with size?

Mr. Andrew Cooke: We would be talking about operating an HVDC link with three ends, or three convertors, with one in Wales, one in Woodland and one on the Border or in Tyrone. That is generally not done anywhere and it is difficult with HVDC. The possibility might increase in years to come.

Deputy Heather Humphreys: Given the information contained in the commission report regarding the latest underground technology, do the witnesses accept that the pre-evaluation report was flawed? I am glad to hear there is some research on the impact on communities to assist planning authorities. Will there now be consultation with the affected local communities as part of this research, bearing in mind there is a viable underground technology option?

It was stated in August 2011 to Monaghan County Council that there would be due regard to the findings of the report. What is the response and what findings will have due regard? What is considered best practice in designing a route?

Mr. Dermot Byrne: The first question was about the evaluation of a report. To which report is the Deputy referring?

Deputy Heather Humphreys: I referred to the information contained in the commission report regarding the latest underground technology. Does EirGrid accept that the pre-evaluation report done earlier was flawed?

Mr. Andrew Cooke: No, we do not. The report concluded that HVDC was a less suitable technology and was inferior for this purpose because of its risk and limitations. It was also concluded that it was considerably more expensive, and that is still our position. Whereas there is a difference on the technical complexity of implementing HVDC, that is largely borne out by the expert commission report; it is significantly more expensive.

Mr. Dermot Byrne: We talked earlier about consultation and improvements. I accept all the points about looking to improve that continuously and we absolutely accept that the projects have an impact on communities. There is no getting away from that, either with an underground or overhead process. We have had much experience and we put much effort into the work; we will continue to do so on all our projects. There is a very detailed road map around how to consult with communities and we absolutely accept that it is vital for us to act in the best way possible. We put much effort into this work.

Deputy Heather Humphreys: The witnesses mentioned research and I asked specifically

if EirGrid would consult with the affected communities.

Mr. Dermot Byrne: The research is more general rather than specific to a line route. We will bring this forward to the planning process as soon as we have it. It is our intention to use this in planning.

There is process with regard to funding, and this hearing is an essential element in that regard. We spoke earlier about the Minister's stated intention to bring a memorandum on security of supply to the Cabinet. Taking on board this hearing and the response from the committee, we will await that action and look forward to seeing what the memorandum will contain. That will set a policy framework for us, which is exactly what we would look for.

Deputy Heather Humphreys: My last question was what is considered best practice in designing a route.

Mr. Andrew Cooke: To clarify, does that relate to the overhead or underground processes?

Deputy Heather Humphreys: I am speaking generally.

Mr. Tomás Mahony: At the outset of a project, the intention is to lodge an application to either local authorities or An Bord Pleanála. In considering the project, one must have regard for a raft of policy documents, environmental legislation, planning legislation and various social impacts. There is an amount of desktop, drive-by studies to be done at the preliminary stages. We try to take account of all the constraints before formulating the best options available. There is a funnelling process which narrows the options until there is eventually a preferred option and route for that option, which can then be taken before An Bord Pleanála. In preparing the application, particularly for large projects, there must be an environmental impact statement and process. In doing this we would measure the impacts across a raft of headings, describe those impacts and present that in the application.

Deputy Caoimhghín Ó Caoláin: I am thankful for the opportunity to join with colleagues at this hearing this afternoon. I welcome the opportunity to meet and address the representatives of both EirGrid and the ESB networks. I have a couple of points and I would like to pick up on the pre-evaluation report, which Deputy Heather Humphreys also alluded to.

EirGrid and the ESB have many resources at their disposal and we should make no mistake that the people lined up against them are ordinary citizens. Before all of this visited their lives, they would have known very little about the technologies, with AC/DC for many only being a rock band. There was a failure to inform the wider public of advances in technology with regard to the potential for an underground approach, although this is favoured. I believe those developments are acknowledged in the commission report and it is clear there have been significant advances in the alternatives to the overhead pylon-supported power line approach.

I am a Deputy for Cavan-Monaghan and I know that within my region, which covers Meath, Cavan, Monaghan, Armagh and Tyrone, a tremendous gulf has been created between EirGrid and NIE and targeted and unwilling host communities. The gulf is so great now that I cannot see it being easily addressed at an early stage. This begs the question of whether EirGrid is intent only on getting its way or is there any development at all in its disposition to this proposition, which in principle is being supported by most, if not all, elected voices and people on the ground. The methodology and approach is the real issue. I have seen no evidence of a shift in the approach from EirGrid. It is the EirGrid way or no way and people are deeply offended by this. It is important to remind both entities before the committee that we, the citizens, are both

the stakeholders and the customer base. It is most regrettable that the very valid and reasonable concerns reflected have been so vehemently ignored and opposed by EirGrid. I will not delay the hearing. The rush to press ahead and impose on families and whole communities overhead pylons supporting power lines is in stark contrast to the approach in many other EU member states and non-EU European states in terms of the whole approach to the creation of new interconnector systems and powerline connections. In a number of instances, they are adopting a *festina lente* approach, whereas the approach of EirGrid is bullish, seeking to move ahead as if the train will leave the station without it. The reality is quite different with the counterpart service providers in a number of European countries. With advancing technology gaining pace for the underground option, which would have universal acceptance, would it not be wiser to adopt the hasten slowly approach rather than the breakneck effort to move ahead of whatever might present in the time ahead?

The real argument that gave rise to this some years ago was need. Regrettably, in terms of the current economic decline, the need today is not as acute as it once was and is arguably less of an issue. This can be measured and I hope for some realisation that this is a cross-Border project and there must be agreement. The process of acceding to the proposition on both sides of the Border is not yet in place. It is a hurdle yet to be crossed.

The document circulated to the meeting is EirGrid's update and conclusions following the Meath-Tyrone review by the international expert commission. I have had the opportunity to engage with a number of the witnesses in a variety of settings over recent years on this issue. It was hammered home to me that the preferred option I advocate, the underground approach, was not feasible. Its feasibility was challenged time after time. However, the first of four conclusion points following the publication of the international expert commission report states "an AC overhead line is by far the technology of choice". The message I take from the conclusions, based on the independent expert commission report, is that choice exists. It is acknowledged in the first conclusion in the document circulated to committee members. Feasibility has been conceded and choice exists. One can only ask whose choice it is. I have been heartened by the considerable strength of the argument presented by people across the political spectrum represented in the Houses of the Oireachtas. I refer to Government, Opposition and Independent voices. We have been of one voice on this matter and EirGrid has a duty responsibility and care to heed those voices and to take on board the concerns of the unwilling host communities that EirGrid has addressed or failed to address heretofore. EirGrid must accept its own conclusions based on the independent expert report. The overhead line approach is not a choice I ticked the box for and I ask that EirGrid, ESB and ESB Networks take on board the appeal of the collective voice of the members of this committee, and others who have joined us, in the course of its engagement.

Mr. Dermot Byrne: There is a lot in what has been said and it covers important topics. Members referred to an information gap and it is fair to say that this issue has been aired extensively at a number of sessions, including at previous Oireachtas committee sessions. These sessions were based on previous reports, such as the Ecofys report - an independent Government report from a number of years ago - our reports, the PB Power report and the TEPCO report. These reports had a good airing, as did the issue of HVDC versus AC, to the extent that a delegation from the previous Oireachtas committee visited a HVDC link using VSE technology in Estonia as part of the deliberations of previous committees. Perhaps the Chairman can confirm this. There was extensive discussion about the technology choice. The backing document in our application to the planning authorities set out the basis for the choice. There are technology options, including AC overhead, AC underground and DC. This is the submission

to the planning authority and we set out the grounds for it. In so far as we have a responsibility to make the choice and bring forward the project, this is the basis for bringing forward the AC overhead submission. We accept that not everyone agrees but the planning authority is the forum for discussion on these issues.

An overriding issue for me as chief executive of EirGrid is that if I was to bring forward proposals for a HVDC link at considerable extra cost and risk, when it does not do what we want it to, this committee would be challenging me for dereliction of duty. The proper forum for factors such as the impact on the environment and the landscape is the planning forum. That is the forum where these issues need to be thrashed out.

I probably have answered all of the questions there. If I have omitted any particular one,-----

Chairman: The rush, given the drop in demand.

Mr. Andrew Cooke: I would say other countries in Europe are getting on with this in the main. In Spain, for example, in the past two years, they have built 3,000 km of 400 kV line driven in large measure by Energías and their renewable objectives.

Certainly, delays in infrastructure has been identified as a problem. Countries are bringing in new legislation. They are bringing in new planning processes. They are looking at other matters. Generally speaking, they are not looking at undergrounding 400 kV lines. The 400 kV lines are going overhead. They are looking at very small sections of undergrounding. They are looking at undergrounding some lower voltage network. They are looking at community gain. They are looking at other matters to mitigate any impact of new infrastructure on the communities through which it is going. They are moving on and they are not undergrounding 400 kV.

Deputy Caoimhghín Ó Caoláin: On Mr. Byrne's point about the planning authority, because of the particular approach adopted here, it goes directly to An Bord Pleanála because it is of strategic infrastructural status, but let us not deny the information to the committee. The planning authorities, as we as elected representatives, have traditionally dealt with and recognised, have themselves made submissions outlining their serious concerns at what is proposed. Certainly both local authorities in my constituency, those of counties Cavan and Monaghan, presented before the oral hearing that had to be abandoned due to the bad preparation for which these companies present were responsible, and the exercise had to be set aside. Planning authorities and expert planners, staff in whom we have considerable faith, have also put their voice and views before these companies present and the public, and before An Bord Pleanála. That needs to be noted also.

Deputy Shane McEntee: As a Minister of State, I must be careful of what I say and not get in conflict with any of my counterparts in a different Department.

We came here today to discuss undergrounding, and we have moved on to many matters. It was music to my ears when I heard Mr. O'Sullivan state that ESB was so strong that it was able to go on the bond market to get its own funding, but under the previous Government the Department of Communications, Energy and Natural Resources had to give ESB permission to do so. The company is not as independent as it thought it was.

This morning the commission came in and stated it was affordable, acceptable and reliable and now EirGrid has clearly stated it is not affordable and reliable. It is crucial, rather than go any further, that the two persons who are looking at this in a room should be brought back in because neither I, nor anybody here, is technically capable of stating whether it is affordable. It

is an area that must be cleared up.

At the end of the day, these are the main issues can we afford it and is it reliable? Deputy English has touched on that. Mr. Cooke has been so negative - he should not take this as an insult. If anyone came in and listened to what Mr. Cooke had to say, he or she would say that all of the people from Monaghan and Meath and all their TDs were here merely to be cranks. It is good that the others on the ground will have their say. We know it is affordable, reliable and, most important, acceptable to the public. I will leave it at that, as a comment rather than a question.

Chairman: Does Mr. Byrne wish to respond?

Mr. Dermot Byrne: To make a point about affordability, the commission set out the difference in costs and it is a great deal of money. The affordability issue is probably a policy issue, on which the committee will have a view and will feed back to the Minister. As regards the feasibility of building this, we are building one and it is kind of easy to do. That is not the issue. It is not a question of us not wanting to do something that is easier to do, perhaps, than overhead. We are doing it. The issue is what is right for Ireland. There is a very significant technical issue in this particular project, the concerns technically about which we have given a view to the committee. It is a very real technical issue. We are not making this up. It is very real.

Deputy Shane McEntee: I understand that. It was a game of two halves. Here we are after using taxpayers' money to pay for the first time ever for a specific underground possibility and they have been very fair, and everybody has accepted it, but now, in the second half, it is not an issue. It makes us, in particular, the people of Meath and Monaghan, look like we are merely doing this for the sake of complaint, and that is not true. The one good development over the past four years is that there has been considerable understanding between EirGrid and those in the Gallery who are watching and who will give a professional view that we are not a bunch of people complaining for the sake of it, and we know the importance of this to the State. I am disappointed that the companies have been so negative about what happened with the presentation this morning.

Chairman: We will try to conclude in the next ten minutes.

Deputy Regina Doherty: I agree with Deputy McEntee. Having been involved with local communities for the past five years, I am genuinely ashamed of the treatment by EirGrid of most of those families.

That aside, Mr. Byrne mentioned earlier that at previous presentations to Oireachtas committees there was much deliberation on HVDC. I was not a Member of the previous Dáil and I am only reading previous transcriptions from the committees. I would disagree with Mr. Byrne. There certainly were not sufficient discussions on HVDC and I welcome that we are discussing it today.

Based on what Mr. Byrne stated during his presentation today, EirGrid's original costs for overhead lines are very different from the expert commission's costs. What is he stating today are EirGrid's costs for the overhead project and for the underground project, and do his costs include costs of delays, land, compensation, etc.?

Earlier Mr. Byrne mentioned the convertor stations. What is the difference between adding a convertor station at Kingscourt and using the original convertor station that is being built at Woodlands for both north-south and east-west?

Chairman: The question was answered earlier.

Deputy Regina Doherty: I am sorry. The question on north-south was answered earlier, but I did not think the one on east-west was.

Chairman: Prior to that, it was answered by the commission.

Deputy Regina Doherty: I apologise, I was not here.

Chairman: It was clarified by the commission that if one is to transmit DC, one must have a convertor at the other end. The question Deputy Regina Doherty asked was whether the existing convertor at Woodlands had the capacity to be one end, both for the east-west interconnector-----

Deputy Damien English: And the North-South one.

Chairman: -----and onwards.

Deputy Damien English: Mr. Byrne stated that one cannot have a three-way station.

Chairman: The other point clarified by the commission earlier is that if one is to bring power along a line, one must replicate what is being done, east and west - one must have a convertor at each end. Regardless of what Woodlands can or cannot do, there must be a convertor at the other end anyway.

Deputy Regina Doherty: My apologies for asking questions asked earlier. I was not here for the commission's submission.

Is the Chairman stating that the other end is Kingscourt?

Chairman: No.

Deputy Regina Doherty: The other end is in Northern Ireland.

Deputy Damien English: The explanation is that there is talk that there must be two, one at the north end and one at the south, for this one, but in the answer to the question it was stated that one cannot have a three-way station. If one is to add in a third one, which is Kingscourt, that is three, but it is not a three-way station.

Chairman: Kingscourt is slightly different. Kingscourt is a substation.

Mr. Dermot Byrne: I am happy to answer the question on Kingscourt. If one takes the two convertor stations at each end of the line for Meath and Tyrone, what one has in between is DC electricity which is not suitable for supplying into houses, farms, industry, etc. When one removes DC one must reconvert it to AC. For example, if and when we need a reinforcement into the north east at Kingscourt, under a DC solution we would have to build a converter station, which would make it a multi-terminal DC link. The additional cost to which Mr. Cooke referred would be required to reinforce the north east in that way.

Chairman: Would it not be feasible to take AC from the County Tyrone border to a substation in Kingscourt?

Mr. Dermot Byrne: It is feasible to reinforce it in a number of ways. What we did with this particular project was optimise it, which had the result that we are building less line overall. If

one does as the Chairman suggests, one must build more line and include that cost in the overall scheme of things. One way or another, if one is to compare apples with apples, one would have to add in the cost of building more line.

Chairman: On that point, Deputy Regina Doherty asked the cost of overhead AC versus underground HVDC and the up-to-date costings.

Mr. Andrew Cooke: I do not have an immediate figure. To compare the two figures, the original estimate for the project was €280 million, while the figure provided by the expert commission for the AC overhead circuit option is €133 million. At least two important differences arise between the two scenarios. The first is that the substation at Kingscourt is not included in the expert commission's analysis and the second is that the commission provided for relatively low costs for the substation at Turleenan. The estimates provided for Woodlands are probably correct as it is an existing station which would only require some additional equipment. However, given that the Turleenan substation is a new station at the northern end of the project or at the Border, irrespective of location it would be a significant cost. Taking account of these two factors would significantly narrow the gap between the two figures. I do not know exactly what the expert commission included in its estimates in terms of equipment costs, project costs and compensation costs. For this reason, I am not sure if we are comparing apples with apples when we consider the two figures.

Aside from the changes to which I refer, specifically the removal of Kingscourt if we do not proceed with that element of the project in the current application, costs have not changed significantly from when we made the original estimates. There may be a little softening around several works costs arising from economic conditions. If we were to provide a new estimate, however, I do not believe it would be much different from the original figure.

Deputy Regina Doherty: Does the original figure of €280 million include the costs associated with Kingscourt, land displacement, compensation and delays?

Mr. Andrew Cooke: It includes compensation, remedial works, land restitution but does not include-----

Deputy Regina Doherty: Does it include the costs of the delays we have experienced for the past five years?

Mr. Andrew Cooke: It does not include delays.

Deputy Regina Doherty: It does not include delays.

Mr. Andrew Cooke: No.

Deputy Damien English: What have been the annual costs of the delays?

Mr. Andrew Cooke: As we indicated, depending on the assumptions used, the approximate costs of not having the circuit are between €25 million and €30 million per annum. There is also an issue about the extent of the delays incurred on an underground cable project given that there is little experience anywhere of projects of the scale envisaged.

Deputy Damien English: There were no delays on the project that has just been completed.

Deputy Regina Doherty: For the record, based on the estimated annual costs provided by Mr. Cooke, the delays we have experienced as a result of not having an underground solution or

any other type of solution have already cost the State in the region of €150 million.

Mr. Andrew Cooke: I am not sure to what extent we have experienced delays to date. The planning process is under way in Northern Ireland and we are obviously slightly behind that as we have not made a planning application here. We are not very far out of line with the Northern schedule.

Deputy Regina Doherty: I am not trying to be pedantic but I will put my question in a different way. The first submission I received from EirGrid about five years ago suggested the line would be built and operating by now. Given that the project has not proceeded very far, I suggest it has been delayed by five years.

Mr. Andrew Cooke: Yes, that is the case as compared with the original schedule. Many factors have been involved in that.

Chairman: I thank Mr. O'Sullivan, Ms Sayers, Mr. O'Leary, Mr. Byrne, Mr. Cooke and Mr. Mahony who were given an opportunity to state their point of view while members were given an opportunity to question and quiz them. Mr. Byrne indicated the deliberations of the joint committee would be valued. Following our meeting with departmental officials next Wednesday, we will take time to consider the issues and respond reasonably quickly. This is a worthwhile exercise as this is probably the only forum which allows for this type of debate to take place.

I propose to suspend until 4.45 p.m., at which point we will give those who have been waiting patiently all afternoon as much time as they need. The meter is full and the lights are working.

Sitting suspended at 4 p.m. and resumed at 4.45 p.m.

North East Pylon Pressure Campaign

Chairman: We will reconvene. I thank everybody for coming back so promptly. We did not have a vote, so we will have to watch that. If we do have a vote, we will have to suspend for a few minutes.

The next session involves the North East Pylon Pressure Campaign. I welcome representatives from the group. We have Ms Aimée Treacy, chairperson, Mr. Pádraig O'Reilly, Dr. Colin Andrew and Mr. John Farrelly, and they are joined by Ms Bernie Andrew. Before I call on Ms Treacy, I would like to remind witnesses about privilege. By virtue of section 17(2)(l) of the Defamation Act 2009, you are protected by absolute privilege in respect of the evidence you give this committee. However, if you are directed by the committee to cease giving evidence in relation to a particular matter and you continue to do so, you are entitled thereafter only to a qualified privilege in respect of your evidence. You are directed that only evidence connected with the subject matter of these proceedings is to be given and you are asked to respect the parliamentary practice to the effect that, where possible, you should not criticise nor make charges against any persons or entity by name or in such a way as to make him, her or it identifiable.

I ask Ms Treacy to make her opening statement. I understand Mr. O'Reilly and possibly Mr. Farrelly will also contribute.

NORTH EAST PYLON PRESSURE CAMPAIGN

Ms Aimée Treacy: Chairman, on behalf of the North East Pylon Pressure Campaign, I thank you and the members of the committee for the opportunity afforded to us this afternoon to advocate the case for putting the proposed North-South interconnector underground.

I am chairperson of the North East Pylon Pressure Campaign. With me are my colleagues Mr. Pádraig O'Reilly, Dr. Colin Andrew and Ms Bernie Andrew and also councillor and former TD Mr. John Farrelly. After my short introduction, I will ask Mr. O'Reilly to brief the committee on the overall case in favour of undergrounding the power lines.

NEPPC is the overall representative group for some 45,000 people of the north east who advocate that high-power electric cables should go underground. The group was formed in November 2007, in response to the massive public outcry emanating from the EirGrid announcement of its plans for a North-South interconnector from Meath to Tyrone. The strong consensus is that the interconnector should be established using underground cables instead of overhead transmission power lines.

Our campaign objectives are as follows. We want to build a rational, cohesive and comprehensive case for an underground cable alternative; influence the political process to achieve consensus on undergrounding; and achieve a change in policy through public support. NEPPC has engaged a range of professional expertise and commissioned a significant number of reports in such areas as technology, agriculture, health, environment, ecology, geology, heritage, landscape and visual impact and land and property devaluation. These reports have resulted in a technically and scientifically well-researched case in support of undergrounding the North-South interconnector.

NEPPC made submissions to the Oireachtas Joint Committee on Communications, Energy and Natural Resources in February 2008 and December 2008. We made a submission and presentation to the Northern Ireland Environment Committee in Stormont in April 2009. NEPPC also met the Danish transmission system operator, Energinet and shared the reports with it.

We favour a strengthened national electricity grid, but it is a recognised fact that extra high voltage power lines and pylons are internationally regarded as being the most objectionable form of public utility infrastructure on land. In contrast to other countries, we have not yet been subjected to a blight of pylons across our countryside, and we must not allow it to happen. They impose significant negative effects when established, in respect of visual and environmental impact, land and property devaluation, and health and safety concerns.

NEPPC welcomes the initiative taken by the Government to engage a set of respected international experts to examine independently and report on the feasibility and cost of undergrounding the North-South interconnector. NEPPC has argued from the outset that undergrounding the North-South interconnector is feasible, given the technological advances happening at a rapid pace.

We welcome the joint committee's decision to hold public hearings on this issue. A decision on the undergrounding of future high power cables is not a single one-dimensional decision. It must be a balanced decision, encompassing not just cost or technology, but health, environment, heritage, tourism, agriculture and people's livelihood. Such a decision is the very essence of democracy and of politics. NEPPC is recommending that the North-South interconnector is constructed using the latest underground cable technology and furthermore, that this technology should become a core component of the overall Grid25 development plan.

Thank you Chairman. I now call on my colleague Mr. Pádraig O'Reilly to outline the rationale behind this recommendation.

Mr. Pádraig O'Reilly: The Grid25 development strategy lies at the heart of this hearing. Although the focus today is specifically on the North-South interconnector, it is important to bear in mind that each and every political constituency in the country will be impacted by the Grid25 development plan. The slides in front of committee members give an outline to that plan in the different parts of the country. The major backbone projects planned by EirGrid serve to emphasise this point. These include the Grid West Mayo project, the Moneypoint to Cork project, the grid link from Cork to Dunnstown in Kildare, the Dublin ring project, the North-South interconnector in the north east and the renewable integration development plan in the north west.

The North-South interconnector is the first of these backbone projects to have been submitted for planning approval to An Bord Pleanála in 2009, but was withdrawn by EirGrid in June 2010 under controversial circumstances. It is 140 km in length, and runs from Dunboyne in Meath, through Cavan, Monaghan and ends at Turleenan in Tyrone. EirGrid's published cost for the project is €280 million, as a 400 kV overhead line. It has never examined an underground specific route or costing.

As outlined by our chairperson, NEPPC has actually spent more money on commissioning expertise to examine undergrounding the North-South interconnector than EirGrid or any other organisation in this country. Importantly, we have commissioned studies on aspects such as the impact on agriculture, on land and property devaluation, on landscape and tourism and on rural business. These reports are crucial to obtaining an accurate cost-benefit analysis.

It is the contention of NEPPC that four decision criteria need to be met in justifying the recommendation for undergrounding the North-South interconnector, namely, feasibility, affordability, acceptability and achievability. First, the undergrounding option must be examined for technical feasibility, including safety, reliability and security of supply. Responsibility for this decision rests with Eirgrid, but also important insights and inputs can be gleaned from the transmission system operators in other countries and from independent experts in industry and academia. In this regard, the international expert commission and the Meath-Tyrone report have particular relevance.

The next decision relates to affordability, and there already have been many discussions on that today. The full project cost-benefit analysis and value for money are critical. Responsibility for the decision lies with the Government, as part of its strategic direction on transmission infrastructure.

The acceptability of electricity infrastructure is very much centred on concerns related to impact on health, environment and local communities. Responsibility for this decision rests with the public in general, but particularly with affected landowners and communities. Finally, overall achievability of the North-South project is the responsibility of all stakeholders in terms of engagement, co-operation and a level of trust.

NEPPC believes that undergrounding the North-South interconnector is feasible, for a number of reasons. We have highlighted those in our slide. First, the Meath-Tyrone report points out that over the past few years there have been tremendous developments in transmission technology that were not considered by several previous reports and thus not considered as an alternative by EirGrid. It further states that for HVDC lines, undergrounding with cables is today a

realistic solution. The most recently developed HVDC system using voltage source converter technology, VSC, has in recent years seen significant technical development and a commercial breakthrough, particularly in Europe. There are now three European manufacturers offering full off-the-shelf solutions for VSC-HVDC converters and three European manufacturers offering extruded HVDC cable.

Second, the choice of similar technology by EirGrid for the establishment of the east-west interconnector and its statements on reliability and security of supply are strong support for its use for the north-south interconnector. Some background to the east-west interconnector and security of supply can be seen in the slides. There has been increasing adoption by other countries of HVDC underground systems, as highlighted in the Meath-Tyrone report. As mentioned earlier today by various parties, many of these cable production factories are completely full up in terms of orders. Fourth, the terrain and sub-surface geology in the north-east are suitable for an underground project, and there are various options available including old rail beds, existing road infrastructure or agricultural land.

A key area of discussion centres on the affordability of the underground system. A comprehensive analysis of affordability needs to encompass the full range of costs and benefits involved. These clearly must include capital costs, operating or life-cycle costs, and impact costs such as land and property devaluation and project delays. The report estimates the capital cost of the overhead line option at €167 million, compared with costs of €286 million, €350 million and €500 million for the underground options, depending on the power flow capacities assumed. The slide highlights the power flow capacities that have been published by EirGrid in terms of its estimated requirement for the future. Given this published information, NEPPC is of the view that the €286 million or €350 million options are the appropriate comparisons to use. Using EirGrid's initial estimate of €280 million for capital costs alone - as has been mentioned here already - for the overhead line, the comparative capital cost of underground compared to overhead lines ranges from virtually equal to 1.25 times higher.

The Meath-Tyrone report highlights that costs can vary considerably depending on, for instance, the terrain involved, the tower design being used, metal prices and many other factors. From a solely technical perspective, the cost of undergrounding has reduced dramatically from an estimated 25 times the cost of overhead lines to between one and three times the cost of overhead lines. The key message is that with ongoing technological advances, and when all other associated comparative costs are factored in, the undergrounding option is now reaching a point of being more competitive than the overhead lines alternative.

The human impact of overhead lines on people's livelihoods and assets such as land and property is also a key component of an affordability analysis. A large number of international studies have been carried out over the last 50 years to assess the impact of overhead power lines on the value of residential property and land in close proximity to pylon towers. The results of numerous such studies have shown that such power lines have a statistically significant negative impact on both land and property values. Furthermore, properties up to several kilometres distant with unrestricted views of such overhead lines also suffer a significant negative effect. The most common effects identified and cited in court cases around the world are reductions in market value, difficulty in selling properties, unsightliness of pylons, and visual and noise pollution. In Denmark, Energinet, the Danish transmission system operator, routinely compulsorily purchases all residences within 80 m of new lines, and has a sliding scale of compensation to 180 m distant.

In 2009, a detailed route-specific study was performed by NEPPC in association with Lis-

ney Associates, using international standards to estimate losses in property value along the proposed route. This took into account the proximity of a property to the line, the type of house and the market price at the time and applied a formula to estimate the loss in value. A similar study was performed by Farrelly & Scully to examine losses in land and agricultural productivity value. This very detailed analysis reported that property losses could be expected to total €387 million, with farm devaluation losses of €651 million. Even allowing for a 50% reduction in both property and land values since 2009, the combined devaluation and potential liability figure is nevertheless still over €500 million.

The delays incurred in upgrading the grid also carry a significant cost. Chambers Ireland, which probably received its statistics from EirGrid and ESB, estimates this at approximately €30 million per year. In an earlier session here, a figure of €25 million to €35 million was quoted by EirGrid. Planning delays are a significant obstacle to efficient roll-out of the grid upgrade. Undergrounding, however, does not require planning and so provides an immediate solution to this problem. It is often assumed that delays are caused solely by public opposition to new overhead lines. This is not the case. The north-south interconnector planning application was withdrawn by EirGrid after a 21-day hearing by An Bord Pleanála and awaits resubmission. Many of the challenges relate to onerous compliance requirements and the practical difficulty of finding a straight-line route option through a countryside where one-off housing has been facilitated. Other impact costs that have not been quantified relate to tourism and local business effects in the vicinity of an overhead line. Taking these costs into account, the overhead line option is between two and four times more expensive than the underground alternative, depending on the level of property and land devaluation. When one factors in all of the additional costs associated with overhead lines that are not covered in this report, it makes the undergrounding option economically justified and viable and thus affordable.

The next decision criterion is that of public acceptance. This is not specific to Ireland. Across Europe, 20 of the 32 main electricity infrastructure projects face delays. This is in stark contrast to the main underground gas pipeline projects, for which no significant delays have been reported. The reasons for delays in ten of the 11 top-priority electricity projects include the common theme of opposition from local populations for health, environmental and visual intrusion reasons. In this regard, the Commission has stated: “It is vital to reduce the planning and construction time for prioritised EU infrastructure, in a way that duly takes into account environmental, safety and health concerns.”

Health effects from proximity to pylons are the key public concern. As evidenced from many international studies and opinion surveys, the overwhelming majority of people believe that electromagnetic fields emitted from overhead electricity lines adversely affect their health. Underground cable systems deal with concerns related to both health and proximity to property. No electric fields are emitted from underground cables, and, importantly, the magnetic field is also greatly reduced. Underground cable routes can if necessary be placed within 11 to 17 m from dwellings, versus 95 m for overhead lines, in order to comply with an exposure limit below the 1 microtesla level. Many European countries - for example Italy, Sweden and the Netherlands - have, based on research related to childhood leukaemia, set safe precautionary levels for human exposure to EMFs that are up to 500 times lower than the informal levels adopted in this country and used by EirGrid. The EMF from an overhead electricity line cannot be shielded, and residences need to be more than 90 m from the line to meet the precautionary safe reading currently adopted in this country. In contrast, even during peak loads, the EMF levels above underground cables reduce to 1 microtesla within 11 m or less. EirGrid is willing to commit, at the most, that overhead lines will be a 25 m distance from residential properties.

This distance would be acceptable if undergrounding was adopted.

The key players in terms of acceptability are affected landowners. These landowners have recently signed form of authority contracts with NEPPC requesting that we represent them in all dealings with EirGrid related to the north-south interconnector. The form of authority contract also serves notice on EirGrid not to enter any lands or property without approval from NEPPC. We carried out a comprehensive survey of such landowners along the proposed route. The survey comprised more than 200 fully completed detailed questionnaires and interviews, representing 95.1% of the non-State landowners and close to 98% of the overall proposed route in terms of distance. Some of the results are highlighted on slides 30 and 31.

Some crystal clear messages were recorded. Some 99% of landowners “object strongly” to EirGrid’s plans for overhead transmission lines. The same percentage, 99%, of landowners “prefer underground cables” as an acceptable alternative. It is encouraging to note that 89% have stated that they would permit their land to be crossed by underground cables. Achievability of this project requires clear leadership by Government, and full involvement of all stakeholders and this is highlighted on slides 32 and 33.

I will now hand back to Ms Treacy to make our concluding remarks.

Ms Aimée Treacy: The committee has heard the broad arguments justifying our recommendation to put the North-South interconnector underground. These arguments have focused primarily on the quantifiable costs and impact of the North-South interconnector project, but there are also unquantifiable effects. What value do we put on our heritage? What value do we place on our environment and on our landscape? What value do we place on the support and goodwill of our people?

Imagine a scenario where one of the most important and necessary infrastructure projects proceeds in a structured and progressive manner, with optimum cost-benefit efficiencies and with a spirit of co-operation and goodwill between all stakeholders. Imagine the message this will send out to our international business community and to the European Commission, which is desperate to see better progress on prioritised infrastructure. This would herald the beginning of a new era. This is the prize waiting to be grasped by taking the courageous but right decision to use the latest undergrounding technologies as a core component of the Grid 25 roll-out.

For our part, NEPPC commits to working very closely with EirGrid, in liaison with the landowners we represent, to ensure a smooth and efficient construction of the North-South interconnector using underground cable technology. The public is largely unaware of the major transmission infrastructural plans for our countryside over the coming years, but it is only a matter of time before this happens. Our campaign looks to our elected representatives, in particular this joint Oireachtas committee, to have the vision and the knowledge to understand the value of an underground strategy. We thank the committee for its time and will be happy to answer any further questions. Go raibh maith agaibh.

Mr. John Farrelly: Like my NEPPC colleagues, I take this opportunity to thank the Chairman and the members of the committee for conducting these hearings today and tomorrow. I want to focus on some specific areas and have no doubt the committee will give serious consideration to these issues. These issues are the effect on agriculture and property prices, the effect on tourism and the effect on the landscape. I was raised in north Meath on one of the farms on which these pylons will be erected if the go-ahead is given for them. In August 2008, some 1,200 farmers arrived on tractors on that farm to demonstrate in a protest in the shape of NO

PYLONS.

If EirGrid's proposals go ahead, many of the small to medium-sized farms across north Meath, Cavan and Monaghan will not be viable due to the size of these pylons, which will create serious difficulties for farmers to farm their land to their full potential. As Mr. O'Reilly mentioned, it has been well documented that the value of residential property and land in areas where there are pylons will reduce substantially, to a far lower level than they are at currently. As chairman of Meath Tourism for more than 20 years and as someone from the heritage capital of Ireland I emphasise that to have these pylons erected across the landscape would be nothing more than sabotage and an insult to the people involved in one of our most prosperous industries. Some 6.5 million visitors came to our shores last year and every visitor we have contributes to creating a job, saving a job or to improving the livelihoods of people here.

The tourist business is everybody's business, from the farmer to the shopkeeper, the industrialist, parents and children and, if I may say it, all our semi-State bodies. Along with Fáilte Ireland, which promotes Ireland at home and abroad, our other semi-State bodies, such as EirGrid, Aer Lingus, Dublin Development Authority, Coillte and so on, have a duty to make it their business to make tourism part of their remit. There are thousands of jobs to be created, provided we protect our heritage and our landscape. If we take "protecting our heritage and landscape" as a slogan for all our semi-States, EirGrid should be forced to change its policy and to place all cables underground.

As a former Member of the Oireachtas, 21 years, and as one of the longest-serving members of Meath local authority, I urge the Chairman and the committee to see this as an opportunity to become pioneers for change in the way we deliver the necessary supply of power throughout the country, and abroad when possible. The committee can do this by recommending to the Government that it should direct EirGrid to place its cables underground. This will be a serious cost-saving exercise. It has been widely accepted by all parties and by EirGrid and the ESB that each year of delay in the building of the overhead lines, will cost from €25 million to €30 million. If, this dispute continues for 14 years, as happened in Roscommon, and overhead cables are still not erected, we will be looking at a loss or cost of €450 million. That far exceeds the difference between the cost of putting the cables underground or overground. Why should the people of Meath, Cavan and Monaghan be treated differently from the people of north County Dublin, where a similar cable has been laid underground out to Batterstown in County Meath?

I thank the Chairman and hope the committee will take on board the serious issues that have been raised in today's debate, the first of four to take place across the country.

Deputy Martin Ferris: I thank the NEPPC representatives for their very detailed presentation which answers many of the questions. I concur totally that the underground option is the preferred and the best way to go. I agree too on the devaluation of property, the effect on tourism, and that from the health point of view, emissions affect people living in proximity to pylons. I agree with all the points made so eloquently.

The expert commission's report suggested it could envisage some of the line going underground and some overground. I cannot understand why all of it cannot be underground. In my experience from my constituency, the cables are practically all underground. Does the NEPPC group accept what the commission has to say in that regard? If not and it wishes to rebut its argument, how does it intend to do that? I was very impressed with the wholehearted support for the group. Mr. Farrelly mentioned that 1,200 tractors had turned out on the farm and that reflects how people in rural communities feel about this issue and their support in opposition to

overground cables. The cost of the evaluation is estimated at almost €500 million when everything is taken into account. The two companies who carried that out, who are quite professional and very thorough, were named. The costs that cannot be quantified are the health aspects. Unfortunately, planners do not seem to take that into consideration when they are giving planning permission for mobile telephone masts, for example. It is wrong.

I wish the delegation well in this campaign. I believe it and concur with everything it said in its presentation. The only agenda it has is that of the community and families. The goodwill towards the project is striking. Support in favour of the project is almost overwhelming, albeit going ahead by a different method. What is also evident from the presentation is that the community wants the project to go ahead and to be proactive in support of it. Unfortunately, the powers that be are not listening to it.

Senator Thomas Byrne: I have nothing to add and do not have any questions. This issue has been substantially rehearsed. I wish the campaign well and, more importantly, congratulate the delegation for the tremendous work it has done over the past four and half years. It has built up the campaign and information available. I do not want to be too critical of semi-State companies but information has to be pulled out of people. The information has gradually emerged over four and a half years as technology has developed. NEPP has played a key role in that.

I am not totally neutral. However, when EirGrid said it was working on the Rush to Batterstown sea link, knew about the cable and was involved in the biggest project in the world, if one was not interested in the project that information would be persuasive. Does the delegation have an answer to that? It is important it be answered because it seems the decisions were made by people not intimately involved in the project who could be persuaded. The question requires an answer from the campaign. Any time we ask questions of a voluntary campaign it imposes a burden. I do not like to ask difficult questions, but the delegation has done a lot of work and research on the area.

Is it a question of money? All things being equal, the international commission and the delegation's research shows this is technically feasible. ESB Networks say it can be constructed. Do we have to make a political decision as a society, which the Government has to reflect, to fund such a project? The delegation said it is not as expensive as other estimates, but it still costs money. Is the issue political, bureaucratic or societal? Do we all have to decide to pay more for electricity to allow projects like this to proceed? Has the issue been raised with the delegation? Was it aware of the cancellation of Moy Hill?

Deputy Peadar Tóibín: I apologise for not being able to attend the last section of the meeting but I had a couple of prearranged meetings I could not cancel.

I congratulate the delegation on its presentation and the efficiency of its campaign so far. It is representative of the community and has relied, as we have seen from some of the reports, on a major amount of empirical research. The research is based on the facts and evidence and then reaches its conclusions, which is very important. It gives a lot of credibility and credence to the campaign.

It has been working in opposition to what I would see as an organisation with an almost bottomless financial pit which has fought it at every turn. Meath needs increased energy. I have been strong on that point. A company like IBM could not be located there at the current time because it does not have the electricity infrastructure. The bull-headed attitude of forcing through overhead pylons has slowed down the ability of Meath to get the electricity infrastruc-

ture it needs. Therefore, it is costing the county money and jobs in the long term by slowing the process down and not allowing for undergrounding which would be much faster in terms of implementation.

No facilities, such as electricity facilities, can be forced upon any community. They have to have the permission of the community which they go through. That is central to any process, whether it is electricity, gas off the west coast or fracking in Leitrim. I cannot believe that a full cost benefit analysis has not been carried out by EirGrid with regard to all the alternative measures. Meath is considered to be the heritage capital of the country and the effects on heritage, culture and tourism have not been properly analysed.

The delegation has shown that its proposal is physically viable and within the financial range of what is possible. In many ways, it has blown the smoke of confusion away from the discussion. It now comes down to a policy decision by the Executive of the State on which the project proceeds.

Deputy Michael Colreavy: I commend the delegation on the work it has done and its presentation. I support everything Deputies Ferris and Tóibín said. The delegation has done a great service, not just to its community but to communities the length and breadth of the country. I represent Sligo Leitrim North and I know the very same issues will arise there. The delegation has done the kind of research the committee and Government should have done. It has presented the results of that work before the committee. I do not think anybody can ignore the evidence presented. Given the value of the work the delegation has commissioned and produced, would it be possible to put it on a website in order that other communities the length and breadth of the country could access it?

Deputy Damien English: I concur with all the comments. The delegation has done great work which has been informative for us to tap into over the past couple of years. Many issues were discussed today. Apart from the presentation, does the delegation wanted to add anything else following the debate today? Is anything that has been said untrue, questionable or need to be proved?

We have discussed reliability for years and the delegation commented on it, with particular reference to crossing the Border and tapping into the system in Northern Ireland. What is the view of the delegation on that?

The wind energy argument is new to me but the delegation might have comments on it. Apart from cost, we need to examine reliability and I would like to hear the delegation's comments on that. The costs in the figures presented by EirGrid are 2:1 but we started at 3:1. Things are changing as we go along. If the existing cost of €280 million is compared to the costs referred to in the report, plus a converter station costing €600 million, the costs are 2:1. We are making progress.

I ask the delegation to comment on the converter station at Woodland. I am not convinced of the need to have two, and then have a third. We should be able to do something. I ask for the delegation's comments or concerns.

Chairman: I believe the reports were sent to Energinet in Denmark. Did this sharing of information take into account the feasibility and the costs associated with an underground line? Were any comparisons drawn with the practice in Denmark? The information provided here differs in its approach from the study undertaken by the commission. I note Mr. O'Reilly re-

ferred to the report in considerable detail.

I refer to today's interactions between the committee members and ESB and EirGrid. It may be too soon to ask the delegation for a considered response but it would be of value to hear the group's response as soon as possible.

I invite Mr. O'Reilly to deal with the question about Energinet and also to address the questions from members.

Mr. Pdraig O'Reilly: I will reply to the questions in order. Deputy Martin Ferris asked for our position on the possibility of partial overhead and underground lines. In our view, the crucial aspect is feasibility. If underground is feasible then the need for partial overhead lines is only driven by the terrain. If the land is difficult to traverse, then overhead lines may have to be considered. It should be noted with regard to some of the projects mentioned in the commission report that one project goes through the Pyrenees between France and Spain, which is very difficult mountain terrain and where a tunnel was built. When one compares such a project with the north east, we do not see any part of the north east requiring overhead lines if underground lines are to go ahead. We do not foresee any cost reduction in having a partial overground and underground situation. Based on the fact that feasibility is not an issue, in our view the lines should all be underground.

As regards Senator Byrne's question about the east-west interconnector as it relates to the North-South interconnector, in our view the question is more a matter for EirGrid given that the east-west interconnector goes from Rush to Woodland and given the statements made about its reliability and the safety and security of supply. Councillor Farrelly asked the question as to why it could not go between Woodland and Tyrone. In fairness to EirGrid and as the commission has pointed out, the HVDC technology has progressed in recent years. However, our first response would be that EirGrid never had an interest in looking at undergrounding, as opposed to the attitude in other transmission system operators in other countries. As far back as 2007, Eirgrid stated on the record that it did not intend considering the underground method; in its view it was not feasible and would be prohibitively expensive. Now it is proven to be feasible, thanks to the advanced technology and affordable, in our view. EirGrid need to look at it in a different way to how it is being presented here today.

Senator Byrne asked about Moy Hill. This adds a bit to the east-west interconnector question because over the past four years there has been toing and froing and, in our view, a moving of the goalposts when the game has commenced, as regards whether it is an overhead line or an interconnector. In the original submission, the Moy Hill substation was part of the justification by EirGrid as to why it could not be considered as a real interconnector. This has now been taken out of the equation. It had been removed from the preliminary evaluation report for the next submission issued last May and so it becomes a full interconnector. It was suggested today that it may be needed in the longer term but in our view, it is either an interconnector or it is not. If it is an interconnector, it adds even more weight to the argument for the underground option and the HVDC option.

Deputy Tóibín asked if money was the only issue and if a policy decision was involved. We do not regard it as a money issue. There is a difference between the definition of cost and of affordability. Something can cost very little and be too expensive for the buyer or it can cost a lot and be good value. In our view, the biggest challenge for us - and it may be a failing of the system - is the lack of accountability on the part of the transmission system operator for aspects such as land and property devaluation. We have heard very conflicting comments over the past

number of years and even today with respect to the presentation. Deputy Colreavy asked the chief executive whether reports had been received on land and property devaluation and overall compensation and he replied by saying it was being investigated. On the other hand, Mr. Cooke was able to state that compensation is part of the €280 million figure quoted for the North-South interconnector. Either the analysis has been undertaken on the devaluation and there are correct figures or else this has not happened. This issue is not solely confined to Ireland. Hundreds of studies have been undertaken across the world. These can provide a very good analysis of devaluation, depending on the proximity of a farm or property to a line. This is neither rocket science nor a mystery but rather it is a case of collecting good, hard facts.

As regards the policy decision, we believe there is a Government policy on undergrounding for the Grid 25 development plan. Everybody would benefit if the policy was clarified. What might be surprising is that as a protest group we have participated fully in the democratic process. We attended the An Bord Pleanála hearing in 2010 and we will abide by whatever decision comes through as a result of any future hearings. Likewise, any such hearing must be fair and the policy needs to be clear as to the options for the North-South interconnector. It is not just an issue of public acceptance but rather EirGrid is not accepting the public view on the public's rights as regards this infrastructure. This attitude needs to shift and to change.

Deputy Colreavy asked about any research undertaken by our group. Our research and reports are available to anyone who needs them. We have shared them with the commission and with other organisations. We have shared most of our reports with EirGrid and we have met with the company on a frequent basis. We may have differences of opinion and on strategy but we have meetings at which we discuss our differences.

As regards the question of reliability and converter stations and options for using the east-west interconnector converter at Woodland for possible use for the North-South interconnector, in our view it is very remiss of EirGrid not to consider these options. Given the cost of a converter it seems to make a lot of sense to use a converter sitting in Woodland for the north-south interconnector.

Mr. Cooke mentioned that this is a possibility which could be considered for the future if HVDC breaker were to be available. I refer the committee to page 55 of the commission report in which states that those breakers will be available in 2013, next year. When figures are being bandied about regarding the cost of the north-south interconnector, there is a responsibility to ensure that those figures are accurate. Rather than throwing in another cost in regard to Moyhill, perhaps consideration should be given to the existing infrastructure coming from east to west and how cost savings can be made on that basis.

My colleague, Dr. Colin Andrew, might deal with the questions regarding the Danish approach to undergrounding. He has visited there and seen at first hand what is happening.

Dr. Colin Andrew: We met with representatives of Energinet in 2009 and had very useful discussions with their engineers. What came across very evidently was that there was a culture of seeking to solve problems rather than find them. That is very different from what we heard earlier today. In Denmark we saw that problems were viewed as challenges to be overcome rather than reasons that action could not be taken. It is an entirely different culture. The Danish Government, faced with the problems involved in installing electrical infrastructure, considered five options, from total undergrounding of the entire network through to zero undergrounding and no change. On 4 November 2008 the Government introduced its chosen strategy, whereby all new 132 kV, 150 kV and 400 kV connections would be laid as underground cables and all

existing 132 kV and 150 kV grid connections would be undergrounded in accordance with a coherent cable action plan, which was published in 2009.

It was decided that existing 400 kV overhead lines would not be dismantled but, in step with developments of security of supply as well as technical and socioeconomic developments, they would all eventually be undergrounded as the technology became available. In the meantime, the visual appearance of the 400 kV grid would be improved by undergrounding shorter sections in urban areas and natural areas of national interest, replacing transmission routes with new designs and adjusting the tracks over shorter distances. The Danish Government presented its policy to the transmission system operator and the latter relished the challenge of achieving it. That is very different from what we heard today, where problems are seen as reasons not to act rather than as a challenge for scientists and engineers to relish with a view to overcoming it.

Deputy Shane McEntee: I thank the delegates for their presentation. Given that this is a joint North-South project, are they satisfied that enough has been done by the Government in this jurisdiction? I understand - the delegates will correct me if I am wrong - that planning permission will go through in Northern Ireland on 6 March based on overground only. A great deal of conflict and confusion may arise after that date if we are debating underground while our counterparts in the North have already made the decision to go overground. Should we be looking to intervene, either through the agency of EirGrid and its representatives or by the Government talking to the Government in the North? The situation could become very muddy the week after next.

Mr. Pdraig O'Reilly: It is largely down to the degree of influence that EirGrid can exercise on the plans for the Northern section. That will be decided by way of a public inquiry rather than the type of hearing we are used to in the South, which takes place under the aegis of An Bord Pleanála. From an overall company strategy perspective, parties on both sides of the Border should be working in tandem. If undergrounding is still being discussed here, then there should be a hold on the Northern section. Otherwise it will get very difficult. One side cannot make a decision in isolation. We are talking about two sections of the same line, each in a separate jurisdiction. Either a policy decision should be made here prior to that time or work on the Northern section should be deferred. We are of the view that EirGrid has a great deal of influence in this regard.

Chairman: I thank the representatives of the North East Pylon Pressure Campaign for taking the time to address the committee and to answer members' questions. As I said at the outset of the meeting, if delegates wish to submit any further information they can do so through the clerk. The full transcripts of today's discussions will be sent on to our contact people in the commission for their observations. I cannot pre-empt what we will do, but I ask the delegates to make their submissions by next week. That will allow us to tailor our questions with that information in mind.

Sitting suspended at 5.45 p.m. and resumed at 5.50 p.m.

County Monaghan Anti-Pylon Committee and Ratheniska Action Group

Chairman: I welcome Ms Margaret Marron, Councillor Owen Bannigan and Mr. Nigel Hillis of the County Monaghan Anti-Pylon Committee. From the Ratheniska Action Group I welcome Mr. John Lowry, chairperson, Mr. Colm Fingleton, public relations officer, and Mr.

John Brennan, treasurer. Delegates should note that witnesses are protected by absolute privilege in respect of the evidence they give to the committee. However, if they are directed by the committee to cease giving evidence in regard to a particular matter and continue to do so, they are entitled thereafter only to a qualified privilege in respect of their evidence. The witnesses are directed that only evidence connected with the subject matter of these proceedings is to be given and they are asked to respect the parliamentary practice to the effect that, where possible, they should not criticise or make charges against any person or entity by name or in such a way as to make him, her or it identifiable.

I understand Ms Marron will make an opening statement on behalf of the County Monaghan Anti-Pylon Committee. Its concerns are directly relevant to the report.

The Laois group's submission has been made in the context of the report. If it is acceptable, I will ask Ms Marron from the Ratheniska Action Group to make her presentation and we will then take questions from members. At that point, we will hear from the Laois group.

Ms Margaret Marron: We thank the Chairman and members for the invitation to appear before the joint committee. We also wish to thank Dennis McKenna and the committee secretariat for all their help.

The disadvantage of making the final presentation is that most or all of the overarching issues have already been ventilated and there is always the danger of ploughing the same furrow. However, the advantage is that we can probably highlight the issues that are of particular relevance to County Monaghan. We generally welcome the commission's report, as far as it goes, and consider it to be fair, unbiased and independent. The commission's brief stated it was to "examine the case for and the cost of undergrounding all or part of the Meath-Tyrone 400 kV line". Initially, we assumed that this term of reference was broad enough to allow the study of all aspects of the project. When we met the members of the commission in July, however, we were extremely disappointed to learn that they were not qualified to take our core concerns of land devaluation, visual impact or health issues into account and would only be studying the techno-economic aspects of the project. There are also many other issues, including landscape amenity value, ecology, corona noise, farm safety, heritage, tourism, etc., which arise.

Our core concerns are common to every power line project this nature the world over. However, those concerns are hugely magnified in the context of Monaghan as a result of the nature of the drumlin landscape, the extent of one-off housing in the countryside and the small size of the farms in a disadvantaged area. While the commission's report is very useful, the committee needs to take the next step and request that the Minister direct that a report into the many areas which the commission members admit they do not have the required level of expertise to consider be compiled. EirGrid has always insisted that undergrounding the North-South interconnector was not technically feasible and would be prohibitively costly. The commission's report has totally undermined the argument to the effect that undergrounding would not be technically feasible. The five referenced projects in Europe prove that not only is it technically viable but also that it is being seriously considered and deployed across the Continent.

The new information contained in the commission's review regarding VSC HVDC technology and new pylon designs should have been included in EirGrid's re-evaluation report published last May. For whatever reason, however, it was omitted. It was due to this lack of transparency in EirGrid's original consultation process that in May 2009 the landowners along the proposed route through Monaghan came together and formed a landowner group. They engaged a firm of Dublin-based solicitors to instruct EirGrid that they would not accept the

400 kV line and massive pylons on their lands and all further correspondence was to be strictly conducted through their solicitors. To date, 85% of landowners along the proposed route have signed up and EirGrid has been informed of the names and addresses of each group member. During last year's consultation process, the landowner's solicitors wrote to EirGrid reminding it that all consultation correspondence should be via their office. EirGrid ignored this and repeatedly corresponded with the landowners by letter and then followed up with direct visits, thereby trespassing on private property.

We are very concerned that the relationship between EirGrid and the landowners has now deteriorated to an irretrievable extent and that this could lead to divisiveness and community conflict, which is the very last thing we would wish to happen. We hope that the last three lines from the poem "Epic" by Monaghan's most famous son, Patrick Kavanagh, will not prove to be prophetic:

Till Homer's ghost came whispering to my mind.

He said: I made the Iliad from such

A local row. Gods make their own importance.

It is ironic that after all the hoo-ha surrounding it, EirGrid's re-evaluation report is now worthless and not fit for purpose. We contend that the commission's report forces EirGrid back to the drawing board. The latter must restart the entire consultation process to take into account the new updated information contained in the commission's report regarding both underground and overhead technologies.

I will now examine the argument to the effect that undergrounding the line would be prohibitively costly. On the morning after the commission's report was published Synergy, friends of EirGrid, were on the national airwaves stating that the country cannot afford the gold-plated underground option. It is interesting that the technical viability of undergrounding was not questioned at that stage. The figure of €333 million to which reference has been made is the cost difference between the gold-plated underground option and EirGrid's most basic overhead design over the entire length of the project. This includes €155 million for the converters at the terminal in Tyrone. The commission's brief restricted it to only studying the Republic of Ireland section of the line. We have estimated that the cost comparison between the equivalent power loading viable underground option and basic overhead design is just €55 million in the Republic. The Dena Grid Study II shows that development costs add only a tiny fraction to the cost of electricity per kilowatt hour, even when undergrounding is considered.

With all the figures being bandied about, it must not be overlooked that EirGrid's original proposed investment in the North-South interconnector and sundry local area reinforcements was €300 million. This was in conjunction with Northern Ireland Electricity's budget of £120 million for the northern section. The commission points out that there are 700 km of underground HVDC cable currently under construction in the EU, as against 450 km of new 380-500 kV overhead lines. It, therefore, seems to be a fact that the issue of cost is not in any way a deterrent to the use of underground cables in preference to overhead lines. The commission also refers to a decision taken in Norway and Sweden to underground major lengths of the South-West Link as being driven by European energy and environmental politics of the future. In this context, we consider that an affordable, cost-effective and technically viable underground solution can be found if the political will exists.

The commission emphasises that there is no correct single solution for all projects and states

that “A specific technical solution must be derived accounting for local conditions”. We assume that local conditions are not just confined to actual physical characteristics of the landscape but also include socioeconomic and environmental impacts and community acceptance. We argue, therefore, that local conditions obtain in Monaghan which favour serious consideration of taking an underground approach. It must be stressed that we are not against the interconnector project *per se*. We contend, however, that undergrounding is the model which best meets the United Nation’s three pillars of sustainability, namely, economic prosperity, environmental protection and social equity, also known as the three Es or the triple bottom line.

Although examining the position with regard to electromagnetic fields, EMFs, was not part of the commission’s brief, it recognises that these are a source of great public concern. The genuinely held fears that there is a risk to health - particularly in the context children contracting cancer - from living in close proximity to a power line of this strength receive absolutely no understanding or sympathy from EirGrid. The latter simply refuses to discuss the issue except to state that it fully complies the International Commission on Non-Ionising Radiation Protection, ICNIRP, guidelines. It must be noted that these guidelines are a source of concern for the both the European Parliament and the Council of Europe. Other European countries, most notably the Netherlands, Switzerland and the Scandinavian states have adopted their own national guidelines based on the precautionary principle. People are afraid of this strength of power line and if EirGrid tries to build a new very high voltage grid too close to homes, we can foresee situations developing across the country that will put the Teresa Treacy debacle into the tuppenny-ha’penny place.

The Electricity (Supply) (Amendment) Act 1934 makes provision to the effect that the centre of an electricity transmission line may be as close as 25 yd - 23 m - to a dwelling. In the context of today’s massive pylons and power lines, which did not exist and were probably not even visualised in 1934, this is a ridiculously close distance and needs to be reviewed as a matter of urgency. EirGrid states that due to the plethora of new one-off houses in Monaghan, a set-back distance of 50 m to the centre line, which is only 40 m from the nearest conductor, is the best it can try to achieve. This is yet another compelling argument for the undergrounding of the line using modern VSC HVDC technology.

The Minister, Deputy Rabbitte, recently stated in the Seanad that the project is “something that is not questioned by any reasonable citizen”. However, given that EirGrid admits Grid 25 is under review due to the economic downturn and plans are flexible to best meet changing circumstances, is it unreasonable to question exactly when this project will realistically be needed? We contend that there is plenty of time available to seriously consider the underground option, which may even result in a faster delivery because community concerns will be totally assuaged thereby facilitating an uncontentious planning process and a fast construction stage. As has often been stated by landowners at public meetings: “If they would just put it underground, sure I’d open the gate myself and help them dig it.”

Chairman: I thank Ms Marron for that.

Ms Margaret Marron: I have some photographs to which I would draw the committee’s attention. They are not very clear in that a little bit has been lost in translation. With regard to the picture on the first page, in February 2011 the County Monaghan Anti-Pylon Committee strung a series of 4 ft helium balloons along the line of the proposed interconnector in order that individuals could understand exactly what height these pylons would reach. The ropes were measured out exactly in accordance with each individual tower and they were held in place by water drums. In the corners of the first photograph members will see the base of a pylon depict-

ed and Brendan and Mary McEnaney's clothesline. Inspector Mary Cuneen was so concerned by that photograph at the oral hearing that she and the other inspector came out and took their own measurements. However, EirGrid, in its re-evaluation report, maintains there is no new information. EirGrid was there for the measurement of this and nothing has been mentioned.

The next photograph shows the McEnaney's house dwarfed by a red helium balloon depicting the height of a superimposed pylon. It is 23 m from the central line to the gable of their shed.

The next photograph is of a dwelling house owned by a young couple in Annyalla. It shows a representation of the height of the pylon.

The next photograph is set in our own area and shows a yellow balloon on the farm of Jimmy and Ann Marron. They were appalled by what that they saw there. Until we did this, people did not realise how close the pylons would be to their homes or what heights were involved.

The next photograph shows the depiction of two pylons on typical drumlin countryside. We wonder at times how EirGrid could proceed with this project in its current format unless it shaves the heads of the drumlins because of the sag. It simply will not work.

The final photograph shows typical drumlin landscape and the positioning of a pylon which is to be situated on a ditch separating the properties of a grandmother and her grandchild who has severe special needs.

I will hand over to my colleagues, Owen Bannigan and Nigel Hillis, and we will respond to any questions Members may have.

Mr. Owen Bannigan: I thank the Chairman for this opportunity to address the committee. I want to make a few comments based on what we have heard today. I will be ad-libbing in some of what I will say in that it is not contained in our presentation. The Chairman referred to the NEEP and said that if there was more information that we could respond to it, and we will do that.

I believe this committee now faces a huge problem, namely, that the independent commission - which the committee and the Minister appointed and set its terms of reference, and the members of which have some of the best technical brains in Europe - has stated that undergrounding is a viable option. It is technically possible using the most up-to-date modern HVDC technology. It ticks all the boxes, as required by the Government White Paper on energy, yet EirGrid, the transmission operator, which came before the committee today, said, no, that is not right, that is not true. The Minister of State, Deputy McEntee, referred to it in a response to a question and he made a very valid point. That is reason I believe the committee faces a huge problem because it must determine what is right and what is not right. In the context of our presentation, as Ms Margaret Marron mentioned, we are well used to EirGrid saying "No" to everything. We have been listening to it say that for four years, as part of the public consultation process. In its pre-evaluation report, which it made public last July, it dismissed everything that had been said at the oral hearing and said that there was no new emerging technologies in Europe that would make it change the stance of its planning application, which is flawed.

EirGrid also said today, which I find unbelievable and this must be teased out, that the proposals by the commission are not suitable to the Irish system. The Minister and the Department set the terms of reference for the commission report. The Department officials would have briefed the members of the commission as to what was needed. The commission met EirGrid

to discuss the project and the proposals in it. If EirGrid is saying that the findings of that report are not suitable to the Irish system, the only way that could be possible is if the commission was not briefed on what is the nature of the Irish system. If that is the case, serious issues will arise in future. Otherwise the report, which we consider worthwhile and one that adds to this debate, will be of no use to the committee. Some serious issues arise here and I say that from having only listened to what has been said here. When our committee has more time, we will cover more of them.

EirGrid also stated today that the Irish system is a light system, that there are frequency issues and it mentioned the issue of a problem with security of supply as a result of using AC and DC in the one system. EirGrid said today that HVDC is a risk to security and that it will not do what it wants it to do, yet the commission, which appeared before the committee and the members of which were appointed and given a job to do for which they have the expertise, said something completely different. I am of the opinion that this is the stance that has been adopted by EirGrid for the past four years. It does not want to consider new technology or anything other than what it has been using in the transmission system for the past 50 years. That is unfortunate because there is an opportunity now to move forward and embrace technology. That is not based on what we are saying. We have been saying this for four years and that has now been independently verified by some of the best brains in Europe. Why has the commission not mentioned any of these issues that EirGrid is now bringing to the table? Why has it not mentioned them in its report? The commission stated today, in an answer it gave to the first question that was asked by Deputy Ferris, that all technical issues can be overcome. That is totally different from what we heard later.

I have two final points. I want to refer to the planning process. It was stated by EirGrid today that the planning process is the place to deal with public concerns such as environmental issues, devaluation and EMFs. I strongly disagree with that and do not believe that is true. If one were to engage realistically in meaningful and honest public consultation, one would deal with all those issues of public concern at that stage. The other side of the issue, to which Margaret Marron referred, is that if we want to get a true account of everything, there is a cost involved in all those issues that are being shoved to the planning process. Those should be incorporated in the costings that have been put before us but, unfortunately, the terms of reference did not allow that to happen. The costs are huge and significant. It has been admitted already this morning by EirGrid that the project has potentially been delayed for three to four years at a cost of €25 million to €30 million. That delay did not happen as a result of people's intransigence. It happened because the public consultation was an a joke and communities had to drag the information out of the proposer, the developer. As the information was coming out, little bits were admitted. The public and communities have lost all confidence in what is going on in County Monaghan. Any reasonable person can understand that and can see that this is the situation. We are well used to things being thrown in.

This is the last point I want to make and then we will deal with any questions unless Mr. Hillis wants to say anything. I know it is not in County Monaghan but it is something that was touched on. I refer to the substation proposed at Moyhill. The pre-evaluation report last July clearly states that EirGrid proposed to omit the substation from its next planning application because it does not see it being needed for a period of five to ten years. Yet today - this is what communities have been used to and have been facing - it added approximately €150 million of a cost to put in a convertor station some time in the future, in addition to the €330 million that the commission had identified as being the increased cost. The figure suddenly jumped from €330 million to between €500 million and €600 million. EirGrid is pulling figures out of the

air in the same way as it pulled figures out of the air at the start of the process. Undergrounding will cost up to 40 times more. That is the problem that the people in County Monaghan have. We welcome the opportunity to air these views before the committee and to engage in whatever discussions members wish.

Mr. Nigel Hillis: I am a civil engineer by background and I am also a small farmer. I can see both sides of the project. I can see it from EirGrid's point of view and I can see it from the point of view of landowners, residents and the local community. I have worked on infrastructure projects in the past, nothing as big as the North-South interconnector but mostly roads, sewerage and water schemes. With regard to the public consultation that took place on the North-South interconnector, it reminds me of the story of the American tourist who asked the local farmer what is the best way to get to Dublin and he was told, "Well Sir, if I was going to Dublin I would not start from here". That is very much what happened to the public consultation.

This project was a discreet project from the very start, 2001. That has been admitted in the Northern Ireland environmental impact study, yet the local communities and the public only became aware of it in 2007 when the route was decided. Two other routes were thrown in for good measure and it was put out for a public consultation process which was based on the decide, announce and defend, DAD, method of public consultation.

Up until the commission's report the underground debate was focused on the ability to underground high voltage AC. In my opinion that was never an option because it required trenches having to be dug at 22 m wide through the countryside. As a civil engineer I know that is not an option. EirGrid was on strong ground when it said the project could not be undergrounded but the commission report has thrown a complete curved ball at the whole project because it has put the spotlight on HVDC, which has never been considered. It was never discussed at the oral hearing. It is my opinion that EirGrid must now go back to the drawing board with a complete new public consultation taking on board the HVDC-VSC and also the new modern pylons and conductors that were mentioned in the report.

With regard to the costs, I believe that my hearing was correct that the ESB said that the €333 million extra cost of the project would add 0.7 of 1% onto the overall cost of electricity to the consumer. Given that a unit of electricity per kilowatt hour is 15 cent, therefore 0.7 of 1% will add 0.1 cent onto the domestic consumer bill for a unit of electricity. It is not for me to decide whether it is affordable but that is what the extra will cost for a unit of electricity.

The term "NIMBYism" was referred to in the report. The term "NIMBY" means "not in my back yard", but it does not literally mean that, it means not in my local area. People do not want things in their local area. If "NIMBYism" literally means "not in my back yard" then I am what may be called a "NIMBY".

Deputy Martin Ferris: I thank the witnesses for their presentation. Like the previous presentation it was very well articulated. We have been through much of the issue today. It all boils down to one thing, namely, minimum costs for EirGrid as against human rights for communities. If my recollection is correct, the bottom line that we heard earlier this morning when we had a presentation from the ESB and EirGrid and from the commission prior to that was that it boiled down to policy and who determines policy. The witnesses are correct that it comes back to the Government of the day and the people who make policy. The main concern must be health and safety and community rights. The principle must be that policy is shaped by legislators and the Government in order to protect people's rights and those of communities.

That must be the primary concern.

I am looking through the presentation of the commission. The North East Pylon Pressure Campaign group indicated that the commission recommended against a fully underground AC solution. It indicated that for the connection along the whole or main part of the route with today's technology the best solution is a VSC-HDVC solution combined with XLPE cables. In effect, it is saying that is probably the best way to proceed, based on underground but where that is not possible one must work one's way around that.

The committee has a decision to make, as have the other elected representatives in this institution. The Government must take cognisance of the fact that the policy must be the way forward, which must support people's rights and ensure they are protected at all times. I will not be found wanting in that regard. I do not have any questions. They have all been asked. It is down to policy at the end of the day.

Deputy Seán Conlan: I am not a member of the committee but as an Oireachtas Member I appeal to the committee when it collates the submissions to take into account the responses of communities and also to take due care and cognisance of the rights of communities in Monaghan, Cavan and Meath. I urge that it would recommend that if at all possible the project should be undergrounded. It is something the communities have worked long and hard on for many years and they have found significant problems with the previous reports by EirGrid. The independent commission's report has been a valuable exercise. The reports and submissions by the NEPPC and the Monaghan Anti-Pylon Committee have also been worthwhile. I appeal to the committee to closely examine the issue before making a final decision and, if possible, recommend an underground solution.

Deputy Martin Ferris: The committee should submit a proposal to the Department asking for the policy to be changed in order to protect the rights of the community and people.

Chairman: The committee will make a decision on that after our meeting on Wednesday, 29 February, when we have heard all of the submissions as we must be fair to everyone. I do not want to pre-empt any decision now. The committee must do two things. First, we must consider additional questions to submit to the commission and ask for its response. Second, we must prepare a formal response.

Ms Margaret Marron: When Mr. Hillis, Mr. Bannigan and I met members of the commission last July the first thing we were asked was whether we had an underground route. Who were we to have one? Then it emerged that EirGrid never had an underground route for consideration. The commission was quite annoyed. It seemed to think that it was up to us to put pressure on the Government to change the law. Today is our only opportunity to do so and we urge the committee to change it.

Chairman: That is why the Minister commissioned external experts to compile a report and he sent it to EirGrid, the ESB and the committee. I am sure he also sent it to the groups for consideration. We endeavour to examine the report in a balanced, impartial and objective manner. I call on Deputy Colreavy who is a member of the committee and he will be followed by Deputy Heather Humphreys.

Deputy Michael Colreavy: I thank the delegation for its presentation and the work it has done representing its community.

When the delegation held discussions with the landowners did it work out the relative cost

for the underground route versus compensating the farmers for overhead wiring? Was there a discussion along those lines? Did the increased costs quoted by EirGrid include the cost of land leased to facilitate the underground route?

Mr. Owen Bannigan: I will make a brief reply. We have not compiled a professional costing. As regards compensation to landowners, in their opinion no amount of money will compensate them for having huge pylons on their land. We do not know how much compensation was proposed. Landowners do not want to be compensated for the use of an underground route. Landowners will open their gates if an underground route is used instead of pylons

Deputy Michael Colreavy: Is EirGrid aware of that?

Mr. Owen Bannigan: Absolutely.

Deputy Heather Humphreys: I compliment the Monaghan Anti-Pylon committee on its presentation and pay tribute to it for the great amount of work it has done over the past number of years. On a voluntary basis they heightened everyone's awareness of the impact the project would have on local communities. I also compliment the group on its technical understanding of the interconnector issue.

I have one question. If EirGrid decided to put the interconnector underground would the groups co-operate and ensure it was done as quickly and efficiently as possible?

Mr. Owen Bannigan: That question has already been answered. The simple answer is "Yes" and that is not coming from the three action groups but the owners. We are the representative groups for the landowners and the rest of the local community who are affected. The project would move ahead rapidly if there was an underground proposal and have the full support of the landowners.

Chairman: I thank members of the Monaghan Anti-Pylon Committee. The final presentation will be by Mr. John Lowry, Mr. Colm Fingleton and Mr. John Brennan, Ratheniska Substation Action Group. Before they start I shall hand over to the Vice Chairman, Deputy John O'Mahony, at 6.40 p.m. because I must leave to make a statement on inter-country adoption. It is just as well that I will not be here for the final part of the meeting as I have connections with County Laois. I do not wish to be rude and I apologise that I must depart. I assumed the meeting would take a while but not quite this long. We did allow a certain amount of latitude by inviting the next delegation to attend. It seemed opportune to do so because the group is connected to the matter. As some people have pointed out, the discussion on the Meath-Tyrone interconnector is relevant due to the infrastructure that will be rolled-out over the next few years. We invited the next group here because of the report and its relevance to their situation.

Mr. John Brennan: Mr. Fingleton will make a presentation and I thank the Chairman for the opportunity to air our views. Having listened to the Monaghan group and the NEPPC all of our concerns are the same. EirGrid adopted the same attitude to all of the groups. Members will probably hear a rehash of what they heard earlier but Mr. Fingleton will outline our situation.

Mr. Colm Fingleton: I thank the committee for inviting us here today. It is great to get an opportunity to talk about an ongoing problem. It was refreshing to hear the authors of the report speak some sense about power lines this morning because we have heard a lot of nonsensical comments over the past number of years.

I am a tillage farmer and business owner from outside Stradbally, County Laois, near a place called Ratheniska. Unlike some of the people who spoke earlier I have 400 power lines running over my land. I have two 40 m towers on my land, a yard that I can no longer use for livestock because the power line is right beside it and a 110 kV line crosses my field. When I met EirGrid I asked them to come to my yard some morning and listen to the line sizzling and experience the true effect of living beside a 400 kV line.

The Ratheniska Substation Action Group was formed in reaction to the proposed construction of a massive EirGrid substation close to Stradbally, County Laois. We found out about it in 2009. Members will have our submission but I shall explain it. EirGrid's plan includes a substation, possibly up to 20 acres, with between 15 and 20 power lines. That figure was based on the number of bays in the proposed substation. Approximately one third of the lines will have 400 kV capacity and pylons will be close to 70 m high, with some carrying up to 800,000 volts. Members will know that lightning conductors will exceed the height of these pylons in all cases.

The project came to our attention in 2009 when we saw a newspaper notice and it is included in our handout. We oppose the project because its sheer scale is unsuitable for a rural location. It is a massive project. EirGrid started by saying it would erect a single 110 kV line from the area to Kilkenny. The reason our area was picked was because two lines interconnected. A 400 kV line and a 110 kV line interconnect in a rural area five miles from Portlaoise, or two miles from Stradbally. There is no industrial region or estate within five miles of the area in question, nor is there heavy industry. Page 3 of the handout contains the original notice in the newspaper. It was smaller than the copy the members are looking at. I have highlighted the line in the notice stating, "Demand in the greater Kilkenny area has placed continuing pressure on the transmission network and, as a result, the existing 110 kV network is approaching its technical limit".

We met EirGrid representatives in November 2009 and they told us the sole function of the project was to bring one 110 kV line to Ballyragget in County Kilkenny. We had an idea what substations were like and said we would have to do our own research. We did so and examined 220 kV and 400 kV stations. We counted the lines in all the cases and measured the size of the sites because the operators would not give us exact measurements when we asked for them. We estimated the sites were approximately 20 acres in size, inclusive of landscaping, which is limited, and fencing. We reckoned the scale of the project would be somewhere in the order of 20 acres but we could not ascertain the number of lines. We were told at the first meeting that there would be an element of future-proofing. When we pushed the representatives on this, they would not tell us what it meant.

We asked EirGrid staff at the first meeting whether they would consider a less-populated location. The area in question is an area of intensive tillage and dairy farming. The damage in the area would be serious as a consequence. We asked the staff whether they could consider alternatives in less-populated areas, such as areas with forestry. They said they would consider the matter and revert to us. We said we would agree to meet the representatives a month later. In the interim, Laois County Council agreed with us and voted that the site selected was completely unsuitable for a project of the kind in question.

At the second meeting, we discovered what EirGrid is really like. It had not considered a single location outside the 3 km circle in our area. It had not taken our question seriously at all. We spent two hours arguing with members of EirGrid over why they did not examine other locations. We asked whether they could tell us the number of power lines and the definition of

“future-proofing”. Eventually, after two hours, we had to walk out because we got no information.

The notice in the newspaper was the only notice made available to householders. It was nearly missed. A local happened to see it and demanded a small meeting of approximately ten people, which was then convened. EirGrid did not send any notification to anybody in the area, considering it was to build a structure that could possibly be the height and size of Croke Park. It should have been within its remit to notify all householders in the area of its plans. The first people to know in County Laois were the members of the chamber of commerce. They were notified four months earlier than we were, although we are the residents of the area. This is symptomatic of EirGrid’s behaviour. EirGrid did not send out one notice unless it was requested.

With regard to long-term damage to the community, we are in a valley that is close to the site of the Electric Picnic, which is a significant tourist attraction. There is a round tower in Timahoe, which is of a similar age to that in Glendalough. The Rock of Dunamaise is one of the most historic sites in Ireland and there is a fantastic valley. The development is to be in the bottom of it and would be seen from every possible direction. It could not be missed. The project would utterly destroy the valley, as members can imagine. Most of the 400 kV pylons are between 35 m and 45 m high. The proposed pylons would be almost twice as high. It is unacceptable that anybody should have to put up with that sort of visual effect.

The health implications have been spoken about by NEPP, which has done a lot more work on this subject than we have. The group represents a larger number of people. While EirGrid’s North-South project is to cost €280 million, the one in question, valued at €100 million, is no small one. By comparison with the North-South project, it is still quite considerable. Fears of health implications go without saying, as do fears over damage to the area.

The main point of contention is the manner in which EirGrid has treated people since the first day. It took from November 2009 until April or May 2010 for us to find out how many bays EirGrid would construct. The only way we could find out was through the Midland Regional Authority in Athlone, which put questions directly to EirGrid. EirGrid told us at that stage it did not know how many bays it would have in the substation, but we found out from its 2008 transmission plan, which is included in our submission on page 6, that there are references to six 400 kV bays and seven 110 kV bays. It states there was to be a further 110 kV station with four 110 kV bays. We were told we were exaggerating to the public when we referred to this number of bays. We asked EirGrid why it was constructing a station that would feed an entire city, or two cities, in a small rural area such as that in question given that it first claimed it wanted to install a 110 kV line. This is the way we have been treated all along by EirGrid. We received no information until the company was put under pressure. When it gives information, it tells us what it wants us to know and no more.

The small notice in the newspaper was the only notice on the project. There was no information on the full extent of the project, the number of lines or the location. The meetings were unhelpful and absolutely disgraceful. EirGrid does not engage with people. We received conflicting answers at various meetings in respect of differences between underground and overground options, and on the cost of installing 110 kV lines underground. EirGrid staff stated here that there is no problem at all putting 110 kV lines underground, yet we were told it could not be done and that the cost would be insurmountable. This is happening all the time.

There was public consultation in June 2010 in Kilkenny and Portlaoise but we received one

day's notice in the press. We received no notification by post, and there were no leaflet drops. There were no telephone calls or e-mails. When we pressed EirGrid on this matter, it said it forgot, despite the fact that the project is valued at €100 million. This is symptomatic of its approach. We protested at the meetings over the manner in which we were treated. The company did not give sufficient notice and we said that if that was the way we were to be treated, we would protest on the consultation day. This represented an opportunity lost for EirGrid in addition to us.

Mr. Lowry and I have been to a couple of conferences. EirGrid held a stakeholders' conference in Carlow about our project, yet the people who were to be directly affected on the ground were the only ones not invited. We went to the meeting at the invitation of Deputy Seán Fleming because he told us it was on. All the "stakeholders", as EirGrid calls them, were invited, yet none of those directly affected by the project was in attendance.

We attended EirGrid's national conference in 2010 in County Louth. In all the opening addresses, and even in that by the CER, there was no reference to the effect the projects would have on the people on the ground. This is a common thread.

We asked EirGrid representatives on a number of occasions whether they would attend local meetings to explain their position to the people. They refused to do so time and again and stated their doing so would be counter-productive. EirGrid uploaded maps and pictures, which were taken before its representatives even talked to us. It took pictures on lands in our area and based on what those pictures reveal regarding what was in the fields, we know when they were taken and at what time of the year. They were taken before EirGrid even started talking to us and before it informed us. It was taking photographs on our lands without permission and those photographs, as well as entire maps of landowners' farms, were put up on its website without any permission from the landowners in question or other residents in the area. This is not acceptable behaviour from any State company, as permission should be sought for such activities.

I referred earlier to the refusal to discuss or entertain alternative options put forward by our researchers. While we have put a great deal of effort into this issue, it is a total drag for us to be involved. Although we have spent hours upon hours on it since 2009, between talking to politicians and councillors, driving around to look at powerlines, examining the grid and trying to get research, we have no resources. EirGrid has endless resources, as is evident from the Meath project where it pulled out of the planning process when things did not go its way. I am unsure about the estimated cost but I believe members are well aware of how much this cost. We have no money to handle such matters.

I refer to EirGrid's total lack of respect for the community. While that might sound strong, it is the fact of the matter as this company does not respect people on the ground. It is a bit rich for EirGrid to claim before this joint committee that it is doing its best to engage with and talk to people as this simply is not true. For example, one must go as far as page 15 or page 16 of the presentation it provided today before coming across a reference to human beings, as they call them - not taxpayers, not citizens, not husbands or wives but human beings - and that is symptomatic of this company. While this disgraceful and arrogant attitude permeates right through the company and we have seen it at all levels, it simply is not acceptable. Moreover, as members have heard, similar problems have arisen with other EirGrid projects throughout Ireland.

Another major problem concerns An Bord Pleanála in that while I do not have a problem with the board, we have no appeals body as the State has taken away our right to an appeal. Consequently, in the case of Ratheniska, a company that has all the powers and all the money

has started off with what was a small project. However, it subsequently has intervened in respect of the county development plans for all the counties surrounding us in an attempt to get justification to make this project look as though it is essential for each county on the eastern seaboard. This is simply not the case. Earlier, I mentioned the initial description of the project on page 3 of our submission. If one compares it with the letter that was sent out subsequently that is included on the next page of the submission, members will see the project initially was to support the greater Kilkenny area with one 110 kV line. However, the second letter, which was sent out in January, states the project is vital to ensure the continued security and quality of high-voltage electricity supply to the local region, including Laois, Kilkenny, Kildare, Carlow and Wicklow. That is very different to the initial project as advertised by EirGrid and members can read between the lines themselves.

Another point concerns what a councillor in Portlaoise described as the two sides of EirGrid. There is the EirGrid that wants to invite one in for cups of tea and biscuits but then, if one does not agree with it, EirGrid takes one to court. For example, page 5 of our submission contains a letter that was sent to my neighbour, Mr. John Lowry, who is the chairman of this action group. During the week that Teresa Treacy was put in prison in Mountjoy and in the midst of the associated media circus, Mr. Lowry received a solicitor's letter from EirGrid because two of its staff members stated he had recorded their conversation on a mobile telephone in his own yard into which they had not been invited. EirGrid sent him a solicitor's letter telling him to destroy the recording on his telephone. Nevertheless, its representative sat in this very seat earlier on and stated the company was making every effort to consult and deal with people on a local level. Members can read this letter for themselves, as it is set out in black and white.

I will not delay members for too long and will move on by turning to what the action group wants to know. If this project is about bringing a single 110 kV line to Kilkenny, as originally advertised, why is EirGrid putting in place a facility of this scale, which is capable of taking 15 to 20 lines? The company now claims the project is required for counties Laois, Kilkenny, Carlow, Wicklow and Kildare when initially it was to cater for demand in the greater Kilkenny area. This simply is not good enough and is unacceptable. No one would apply for planning permission by initially stating one intended to build a single house, only to then turn around and state one intends to build 20 houses. Effectively, this is what these guys are doing. Although EirGrid stated its intention to apply for planning for one line, it now states its intention to put in place a facility to take 20 lines.

The action group wants to know whether EirGrid has future plans to bring a 400 kV line from Cork. Our contention all along has been that EirGrid is building such a line. We contend it is trying to sneak it in as a small structure because it wishes to build a super substation or hub in the midlands to take a 400 kV line. The company has denied to us that such a line is planned. However, I refer to page 7 of the submission, which contains a document with an EirGrid heading. Although the copy is a little vague, it comes from negotiations the action group had with the Commission for Energy Regulation and members can see it is a proposal for a €441 million project coming from Cork to Dublin. Nevertheless, EirGrid has denied to us that a 400 kV line was coming from Cork. We asked EirGrid about it because we knew it was coming or was in the pipeline. When we asked the company whether such a line was coming to our area, it replied it definitely was not. However, it also denied that such a line ever was coming.

In addition, given that EirGrid has approximately 28 km of underground 400 kV line outside Dublin, why did it oppose Laois County Council's development plan, which states that in future, 400 kV lines in County Laois should be underground? This specification is contained

in our county at present and was the subject of a unanimous vote by Laois County Council. Neither the Minister for the Environment, Community and Local Government nor the Minister for Communications, Energy and Natural Resources, Deputy Rabbitte, overturned this plan but EirGrid took Laois County Council to the High Court and outlined what would be the repercussions for councillors if they did not overturn the plan. It was claimed that such councillors could be levied directly with the costs, which could run to €250,000. As members might expect, the councillors could not possibly take such a risk of being levied. Were they to lose, the county council would not take the hit on the legal costs and it would be levied on the councillors themselves, who in consequence were obliged to agree. I do not think the provision actually has been removed from the county development plan yet but the councillors were obliged to agree to amend it.

This pertains to the rights of people in County Laois and of their public representatives. In our consultations with them, they could see the future in County Laois lies in agriculture, tourism and similar measures that people are trying to develop in the county and a 400 kV line overground goes completely against that. The county councillors saw the value in the suggestion and voted unanimously to put such lines underground. However, EirGrid thinks it can overrun the rights of citizens in our county and our will to vote through this measure. The company has threatened the councillors in the High Court, effectively with taxpayers' money, and has taken away our rights. This simply is not acceptable and the committee should look into this issue because that sort of thing should not be allowed to happen.

In respect of our particular case, the action group wishes to know the reason EirGrid has not realistically looked at other options and note other substations are located in other parts of the country. A project in Nenagh that was part of Grid 25 was pulled - Ratheniska was not even in the main body of Grid 25 - and we asked the company the reason. Even though I am sure EirGrid told the people in Nenagh that this project was required and the country could not survive without it, nevertheless it was pulled. Although we could get no explanation as to the reason for this, I note that also was a 400 kV substation. There already are existing substations from which a 110 kV underground cable could be brought to Kilkenny to support it. The argument being thrown around to farmers in our locality is that Glanbia cannot expand because it will not have enough power and because Glanbia is the biggest user of power in County Kilkenny. However, as Glanbia has a fully integrated CHP plant that I am assured can provide it with all the power it needs and which possibly can feed back into the grid, that company does not require power. This story simply is not true but is the sort of stuff that is being bandied about by certain employees of the ESB or EirGrid.

The action group does not understand the reason EirGrid keeps us in the dark. While we would have found out the information eventually anyway, the company should have told us exactly what was the position straight away, because its approach merely angers people more, which is what the company has succeeded in doing to date. Why has EirGrid been given so much unregulated power? It appears to me as though it claims that everything about human beings, landscape and everything is a matter for An Bord Pleanála but that simply is not acceptable. They have been given far too much power. They think they can do what they like and if one does not agree with them they will take one to the High Court. That sort of attitude is not acceptable.

Who independently evaluates EirGrid? Does anybody do so? We want our project to be evaluated. We want somebody to look at it and say whether it is necessary. The scale of the project is either necessary or unnecessary considering that power usage is down by 20%. There

is a shortage of money in the country, yet they are talking about spending €100 million here.

We are taxpayers, citizens and caretakers of this country. We would like to be treated with respect and common decency by this State body. The arrogant behaviour we have witnessed from EirGrid, from the top down, is unacceptable and must change. We want an independent evaluation of this project, its justification and suitability. I have explained about the county development plan and we want the decision of our county council kept. We want EirGrid to withdraw its High Court case on that. We want decisions at a senior level. We are fed up dealing with people on the ground at EirGrid. We have no time or respect for them anymore at this stage because they do not give us the answers we ask for and it takes us months to find them for ourselves.

If discussions are to take place, they will have to be at a senior level. We hope the joint committee can see our point of view, as well as the frustrations we are having to deal with. We would obviously like to move the matter on and try to resolve the problems we are facing.

We do not trust or believe anything that EirGrid says at this stage. There is so much anger on the ground in our area that nobody wants to entertain the idea of dealing with the company. We had our protest in January and had a meeting with the Minister for Communications, Energy and Natural Resources, Deputy Pat Rabbitte, on Friday. In addition, the joint committee has taken an interest in our case, inviting us to speak here today. As a result, EirGrid is throwing out information left, right and centre. Up to mid-January, EirGrid had even refused to provide a map to our own Oireachtas Members to show where the route was going. We were left with a scenario whereby we had to piece together every farmer's section of the line, put them on a community hall floor and join them together to see where the route was going. EirGrid gave each farmer a map of his section of the line, but the company does not want to provide the full line as that would mean one could put the whole jigsaw together and thus stronger community groups could be formed with more power. EirGrid will not give us the information. Our Oireachtas Members know that because they approached EirGrid and were told up to mid-January that they would not get the map. That is not acceptable.

Until such time as our concerns are recognised this project will be stalled. We will not get involved with a company that deals with us like this. This is a State company which taxpayers, including us, pay for. We look after our countryside. We built our own water scheme in our area and maintain all the ditches. We have a local village with a new school and a state-of-the-art GAA pitch. We have put everything into our community but these guys think they can come in and, with a click of their fingers, destroy that community. That is simply unacceptable to us.

I am sorry if I went on for too long, but it is an emotive issue for us. I hope the joint committee has got the gist of it. I wish to thank the members of the joint committee, as well as our local Oireachtas Members for their support.

Vice Chairman: I thank Mr. Fingleton who delivered his presentation with passion.

Deputy Martin Ferris: I thank Mr. Fingleton for his presentation whose content was quite disturbing. Communities and individuals have a right to be treated with respect. I have only heard Mr. Fingleton's side of the story so I want to be upfront. I would not want to do anybody an injustice in this matter. If everything Mr. Fingleton has said here is accurate and stands up, then his community is being treated disgracefully.

I am a bit lost concerning the county development plan. Mr. Fingleton said that in the plan,

councillors said all future 400 kV lines would be put underground, and that this decision is in the process of being changed due to a High Court action by EirGrid.

Mr. John Lowry: Can I answer that for the Deputy?

Deputy Martin Ferris: Yes please.

Mr. John Lowry: The county development plan came up for renewal in 2012.

Vice Chairman: I am sorry, it is just that if there is something-----

Deputy Martin Ferris: It is interesting because I am confused about it.

Vice Chairman: It is just in case there is something *sub judice*.

Deputy Martin Ferris: No, it is okay.

Mr. John Lowry: All the county councillors decided to make a submission to the county development plan to the effect that all 400 kV lines in County Laois would in future be put underground, as we had a 400 kV line running through Laois at the moment. Therefore all future 400 kV lines were to be put underground in Laois. That was brought to the council but it had to go out for revision again because it was contrary to what was put in the draft plan by the county manager. It went out for submissions, came back and was voted into the county development plan unanimously. Subsequently, the Minister for Communications, Energy and Natural Resources and the Minister the Environment, Community and Local Government had powers to overturn that within one month of the draft plan being submitted. They did not do so in that period and subsequently EirGrid brought a High Court action against Laois County Council and the council members. Under investigation with their lawyers, the county councillors-----

Vice Chairman: I fear the matter Mr. Lowry is discussing is *sub judice* and, as such, it is in breach of the rules of debate. It is in everybody's interests not to discuss it.

Mr. John Lowry: That is okay. Maybe the Deputy understands it.

Deputy Martin Ferris: I am just trying to get my head around this. I think this might be a section 140 matter, is it?

Vice Chairman: I do not want to subvert the debate, but the rules do not allow for such a discussion. If there is something before the courts it would be better in everybody's interests not to discuss it at this stage.

Mr. John Lowry: Yes.

Deputy Martin Ferris: The reason I asked that was because my understanding is that a county development plan is voted democratically by the elected representatives of the county. I have heard of situations where councillors could be liable for section 140 matters concerning a county development plan or a planning aspect. If they voted to give a section 140 in a planning matter and an accident occurred on a bend in a road, the councillors could be individually liable for it. I wanted to clear up that aspect.

As regards the scale of the proposed project, has it gone through the planning process yet?

Mr. John Lowry: No.

Deputy Martin Ferris: Okay. Mr. Lowry mentioned that they had taken away the right of appeal. If it has not yet gone into the planning process - unless it goes directly to An Bord Pleanála, as it can in exceptional cases - an appeal can be made through the courts. I know it is expensive but there is a right of appeal there. That is there for the group's own benefit if it comes down to it.

EirGrid's reply states that the proposed reinforcement requires the following: a new 400 by 100 kV sub-station; a 100 kV extension; a 38 kV sub-station; a new 100 kV circuit between the two stations; and a changed operation between Ballagh of 38 kV to 110 kV. It has not mentioned a 400 kV line there?

Mr. John Lowry: No.

Deputy Martin Ferris: This was an official response, right?

Mr. John Lowry: Yes.

Deputy Martin Ferris: I do not know whether or not that allays Mr. Lowry's fears.

Mr. John Lowry: No.

Deputy Martin Ferris: It does not do so, okay. Obviously there has been a total breakdown in communications between EirGrid and the Ratheniska action group. I would hope, and can only suggest, that the elected representatives from the areas concerned will sit down, both with EirGrid and the Ratheniska Action Group, to try to sort this out. The Ratheniska Action Group needs to know the truth and what is coming down the road against it. It needs to be acquainted with every aspect concerning the community and the damage it may or may not do there. It needs to be aware of all that. Is EirGrid refusing to meet with the Ratheniska Action Group?

Mr. Colm Fingleton: No. We have been there already trying to meet with EirGrid with our public representatives but it just gets worse. We were told at the start of this project that we could have no other option but only an air-insulated station which would be a standard open type facility. We asked if a gas-insulated station, GIS, could be installed which would be contained in a building. EirGrid told us on numerous occasions it could not be done as such stations are only suitable for urban environments and far too costly.

However, if one examines the latest documents since January on the project, there is a picture of a GIS surrounded by several houses down the end of a lane. Suddenly, EirGrid is making it out that a GIS is the preferred option. We do not believe EirGrid will put in place a GIS-----

Vice Chairman: Sorry, but I need to put a bit of order to the proceedings and we need to take some more members' questions.

Mr. Colm Fingleton: Yes, but Deputy Martin Ferris knows what I am saying.

Deputy Ann Phelan: I thank the Chairman and compliment both groups on the arguments they presented this afternoon. I am concerned the groups are not being engaged with and they cannot get information. What kind of information were they able to glean from their local councils? Were the executives of the councils - not the members - helpful? It is also a concern that councillors who contributed to a county development plan could be threatened with a legal liability that could be incurred down the line.

This afternoon's proceedings just throw open how the whole planning process goes about its business and show how disconnected it is. It seems to fall down on one issue, namely, lack of communication.

From what I recall a public consultation for the Ratheniska area took place in Carroll's Hotel, Knocktopher, in October 2009. I did not attend because I was not a county councillor for that area. However, I am alarmed to think a State company will not engage with these groups. I accept mistrust emerges with resource companies such as mining as it seems to be a human condition. If the information was made available more readily, it would help progress a resolution to the problems experienced in these projects.

Senator John Whelan: I am conscious of the time and how long people have attended this important hearing. I thank the committee for affording the various groups the opportunity to air their concerns and put forward their factual positions. In particular, I welcome the invitation to address the committee being extended to the Ratheniska Action Group from County Laois as it was not directly involved with the interconnector issue.

We have to get it out of our heads that this is a local problem and issue. This has nothing to do with the interconnector, Cavan-Monaghan, Meath-Tyrone or even Laois-Ratheniska. This is a national policy issue for which this committee must take ownership. We have a responsibility to the citizens to do so. I praise and commend my colleague, Deputy Martin Ferris, for his interest and the open-mindedness he has shown to all representations. I assure him, however, the public representatives from County Laois are every bit as formidable, as concerned and as capable of representing our communities in this matter.

I am ashamed to admit that everything the Ratheniska group has put on the record today regarding the obstinacy and obfuscation by EirGrid is true. A year ago I went into this process with an open mind and thought the Ratheniska group was exaggerating its experience with EirGrid. However, having gone to so-called consultation meetings, I have become more frustrated and know less. That is more insulting and demeaning for an Oireachtas Member because his or her community expects him or her to be capable of ascertaining fundamental information on their behalf.

A high voltage pylon could be going past one's front door but one will not be told about it until the last minute, unless it is in one's front garden or on one's farm. How come these problems did not arise in projects involving Bord na Móna, Bord Gáis Energy, the National Roads Authority or the old ESB? Those companies never bulldozed their projects over people or through communities.

EirGrid's corporate culture is based on confrontation rather than meaningful consultation. It has backed communities into corners, delayed infrastructure projects which costs the taxpayer tens of millions of euro. The myth that these problems are local issues caused by a few awkward people was blown out of the water here today. EirGrid's reputation and credibility is shot to tatters. It must go back to the drawing board to learn how to negotiate and consult with people. This is about the State's vital and important infrastructure and getting back on its feet economically. EirGrid is charged to ensure this part of the infrastructure is put in place but doing so with respect to landowners and communities.

The technology exists to put these lines underground and the cost differential is moving closer all the time. I believe EirGrid has known this all along. It drip feeds information when it is forced to. It would rather go to the High Court than to talk to a community or a landowner.

The day Teresa Treacy from Tullamore, County Offaly, was committed to Mountjoy Prison by EirGrid showed it had no shame or embarrassment on the matter. It still has not learned that its bullyboy tactics do not work. It sent a letter to Mr. John Lowry of the Ratheniska group in which it wrongly accused him of tape-recording their agents in his own farmyard. These are more the antics of the KGB than a wing of the ESB. Who would be predisposed to such antics? I commend the committee today for its open-mindedness and allowing everyone the opportunity to put their cases in the open. Light has been shone on this issue. The committee must take due stock of all the information put before it in an open-minded and judicious fashion and be fair in its deliberations and determination. I also commend the Minister for initiating the process of commissioning the international independent report by experts. I am flabbergasted that the previous holder of that office, who had a green mandate, refused to do so and sleepwalked into the project, and held hands with EirGrid, without taking to heart the interests of the public and the economy. I am grateful to the Chairman and commend the committee on its open mindedness and willingness to give everyone a fair opportunity to contribute in this forum.

Vice Chairman: I apologise for overlooking the fact that the Senator had indicated earlier and is a member of the committee.

Deputy Charles Flanagan: I am not a member of the committee but I thank the Chairman and Vice Chairman for acceding to my request to place the matter on the agenda and to receive a formal oral submission from my constituency this afternoon. I endorse what has been said and welcome the all-party support given by members of the committee.

I will make one comment on what Deputy Ferris has said. I know that he wished to be helpful and constructive when he mentioned the option of a court. This is a real David and Goliath struggle and local communities in County Laois are not in a position to go to court at the drop of a hat like EirGrid. The High Court is as accessible to communities as the Ritz Hotel is and it is not possible for them to go to court on a regular basis, nor will it be.

I hope the committee, with whom I have had correspondence, will support the submission. I hope it asks for an independent evaluation of the project and recommends that the Minister direct EirGrid to agree to an independent evaluation and that he requests that other options are explored. We have had a long day. I was not here for the entire meeting but I listened in my office. I was delighted to hear the Monaghan and Meath groups in a way that I had not engaged in the past. There are policy options in other European countries and I ask that the committee requests the Minister to examine the Danish and other European options and follow international best practice. I hope that we have not engaged in ruining our environment as has occurred in other areas of Europe. From my constituents' point of view, I am delighted that they were listened to today. I thank the Chairman and committee for their forbearance. I thank the campaign committee, their families and supporters for coming here and telling their story. This is a David and Goliath struggle. We must, as elected representatives, ensure that fair play and justice takes precedence over any corporate goal by EirGrid or any other body.

Vice Chairman: I thank the Deputy. We have had a long day but an enlightening one. I thank both groups for making their presentations. Does anyone wish to make a concluding remark?

Mr. John Lowry: I want to reply to Deputy Ann Phelan. We approached the county manager but he felt he was not in a position to meet us. He never met us in any circumstances, not even with his county council staff.

Deputy Ann Phelan: I thank Mr. Lowry.

Mr. Nigel Hillis: I support Senator Whelan's comments on the EirGrid corporate culture. As Deputy Phelan mentioned, EirGrid's aim is to get its project through the planning process and nothing else matters. As I said, I am a civil engineer and I have a problem with EirGrid as a corporation but I have no problem with its engineers who are present. They are my colleagues and my group has no problem with them as individuals. The corporate culture will have to be changed.

Mr. Owen Bannigan: I want to comment on the court issue and inform the committee. About four years ago Monaghan County Council varied its development plan, went through the public consultation process and varied the plan to keep high voltage power lines at a minimum distance of 100 metres from a dwelling house. EirGrid took that case to the High Court and the county manager did not defend it.

Deputy Martin Ferris: Did EirGrid hold the councillors responsible?

Mr. Owen Bannigan: The council would have been responsible for costs if it had lost the case.

Deputy Martin Ferris: I refer to individual councillors.

Mr. Owen Bannigan: The case did not get that far.

Vice Chairman: I thank the two groups, the members of the committee and all of the public representatives for attending. As the Chairman said earlier, if groups wish to make further points, including those present, after the conclusion of today's deliberations, please forward them to the Clerk of the Committee over the next few days and weeks. That concludes our proceedings. The committee will meet officials from the Department of Communications, Energy and Natural Resources next Wednesday.

The joint committee adjourned at 7.15 p.m. until 10 a.m. on Thursday, 23 February 2012.